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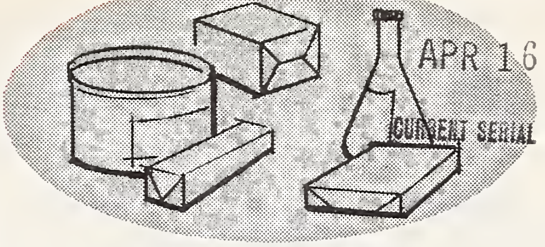


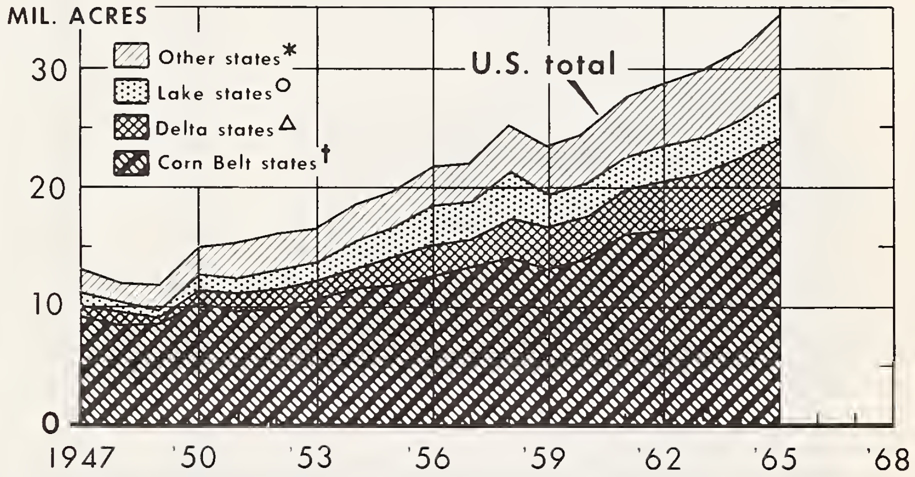
FATS and OILS SITUATION

FOS-227 MARCH 1965

U.S. soybean acreage has nearly tripled in the postwar era, rising from around 12 million acres in 1947-49 to a record 34 million indicated for 1965. Important factors have been: (1) New varieties of soybeans better suited to both old and new production areas; (2) the shift of acreage formerly in oats to soybeans; (3) acreage restrictions on corn, wheat, and cotton; (4) the sharp expansion in market outlets for soybeans and products; and (5) favorable prices received by soybean producers.

Rapid increases in the Delta, Lake, and other States have reduced the relative importance of the Corn Belt States from about 70 percent of the total U.S. soybean acreage in 1947-49 to 55 percent in 1965. (See page 27).

SOYBEAN ACREAGE PLANTED FOR ALL PURPOSES



*ATLANTIC COAST STATES, PLAINS STATES AND ALL OTHER. °MINNESOTA, WISCONSIN AND MICHIGAN.
△ARKANSAS, MISSISSIPPI AND LOUISIANA. †ILLINOIS, IOWA, INDIANA, OHIO AND MISSOURI.
1965 DATA BASED ON MARCH 1 INTENTIONS.
U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 3539-65 (3) ECONOMIC RESEARCH SERVICE

FOR 3 P.M. EST RELEASE, APRIL 1

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Table 1.--Wholesale and retail prices per pound for fats and oils

Item	February		1964	1965	
	1963	1964	December	January	February
	Cents	Cents	Cents	Cents	Cents
Wholesale Prices:					
Butter, creamery, Grade A, (92-score) bulk, New York	58.8	58.8	59.9	58.8	58.8
Butter, creamery, Grade A, (92-score) bulk, Chicago	57.9	58.0	59.2	58.0	58.0
Butter, creamery, Grade A, (92-score) prints, San Francisco	68.8	70.8	72.5	69.8	69.8
Castor oil, dehydrated, tanks, New York	25.1	25.1	25.1	25.1	25.1
Castor oil, No. 1, Brazilian, tanks, imported, New York	15.3	14.5	13.9	13.6	13.2
Castor oil, No. 1, tanks, f.o.b., New Jersey mills	20.0	19.0	15.8	15.2	15.2
Castor oil, No. 3, domestic, tanks, carlots, f.o.b. New York	18.5	18.3	13.8	13.4	12.9
Coconut oil, crude, tank cars, Pacific Coast, f.o.b. mills 1/	11.2	11.9	14.7	15.3	16.0
Coconut oil, crude, tanks, f.o.b. New York, 1/	12.1	12.7	14.7	15.3	16.0
Coconut oil, refined, drums, l.c.l., New York 1/	16.0	16.8	18.0	18.8	22.0
Cod oil, spot, drums, New York	8.1	9.8	11.5	12.1	13.0
Codliver oil, medicinal, U. S. P., barrels, New York	16.9	18.2	18.2	18.2	18.2
Corn oil, crude, tank cars, f.o.b. Midwest mills	14.5	9.9	14.1	13.1	13.9
Corn oil, refined, tanks, New York	17.9	12.8	16.7	16.1	16.8
Cottonseed oil, crude, tank cars, f.o.b., S. E. mills	10.1	9.1	12.3	12.4	13.0
Cottonseed oil, crude, tank cars, f.o.b., Valley	10.0	9.0	12.1	12.4	12.9
Cottonseed oil, crude, tank cars, f.o.b., Texas	9.8	9.2	12.2	12.4	12.9
Cottonseed oil, p.s.y., bleachable, tank cars, New York 2/	12.3	10.8	13.5	13.7	14.2
Cottonseed oil, refined, tanks, New York	13.0	11.8	14.8	15.0	15.5
Cottonseed-oil foots, raw (50 percent T.F.A.) delivered East	1.6	1.6	1.6	---	---
Degras, Lanolin technical, drums, New York	21.0	28.0	37.0	38.6	39.0
Glycerin, soaplye, tanks, New York	9.9	13.4	14.0	14.0	13.7
Grease, A white, tank cars, delivered Chicago	4.8	5.8	8.3	7.7	8.0
Grease, B white, delivered, Chicago	4.5	5.3	8.0	7.4	7.9
Grease, yellow, delivered, Chicago	4.3	5.1	7.7	7.2	7.5
Grease oil, extra No. 1, drums, Chicago	12.0	12.0	13.5	13.5	13.5
Lard, loose, tank cars, Chicago	8.2	9.3	11.0	10.9	11.2
Lard, prime steam, tierces, Chicago	9.6	9.2	10.9	10.9	11.2
Lard, refined, 1-pound cartons, Chicago	14.7	14.5	16.3	16.2	16.2
Lard, refined, 1-pound cartons, New York	14.2	14.8	16.3	16.3	16.3
Linseed oil, raw, tank cars, Minneapolis	12.7	13.3	13.9	13.9	13.9
Linseed oil, raw, tanks, New York	13.8	14.4	15.0	15.0	15.0
Margarine, colored, delivered, Eastern U. S.	23.8	23.8	26.0	25.6	25.9
Margarine, yellow, quarters, f.o.b., Chicago	24.2	25.2	26.2	26.2	26.2
Margarine, white, domestic vegetable, Chicago	23.2	23.2	24.2	24.2	24.2
Menhaden oil, crude, tanks, f.o.b. Baltimore	4.8	8.3	9.1	9.2	9.3
Menhaden oil, light pressed, tanks, New York	9.0	10.0	11.3	11.3	11.3
Neat's foot oil, 30°, drums, carlots, New York	27.0	27.0	27.0	27.0	27.0
Oiticica oil, drums, f.o.b. New York	24.0	30.0	19.8	19.8	20.1
Oiticica oil, tanks, New York	22.0	28.8	17.8	17.8	18.2
Oleo oil, extra, drums, Chicago	16.5	17.8	18.2	18.2	18.2
Olive oil, imported, edible, drums, New York	54.7	31.7	33.5	34.7	38.9
Palm oil, clarified, drums, f.o.b. New York 3/	14.0	14.2	14.6	15.1	15.5
Palm kernel oil, bulk, c.i.f., New York 3/	12.6	12.9	14.4	15.5	15.8
Peanut oil, crude, tank cars, f.o.b. S. E. mills	12.6	9.9	15.2	14.8	15.5
Peanut oil, refined, tanks, New York	15.6	12.6	17.9	17.8	18.2
Rapeseed oil, refined (denatured), tanks, New York	13.5	14.0	14.8	15.0	15.2
Safflower oil, nonbreak, tanks, East Coast	18.0	12.0	15.6	15.6	15.6
Safflower oil, drums, East Coast	20.0	14.0	---	---	---
Sesame oil, refined, drums, New York	37.0	33.0	33.0	33.0	33.0
Shortening, Cottonseed, hydrogenated, 10-drum lots, New York	20.2	21.2	23.4	23.5	23.5
Soybean oil, crude, tank cars, f.o.b., Decatur	9.2	8.0	12.0	11.6	12.1
Soybean oil, refined, tanks, New York	11.4	10.1	14.0	13.9	14.3
Soybean oil, clarified, tanks, New York	11.1	9.7	13.8	13.5	14.1
Sperm oil, natural, 45°, drums, New York	17.5	17.5	15.5	15.2	15.2
Sperm oil, bleached, winter 45° drums, New York	18.5	18.5	16.5	16.2	16.2
Tall oil, crude, tanks, works	3.5	3.6	3.6	3.6	3.6
Tall oil, refined, tanks, works	7.5	7.5	7.5	7.5	7.5
Tallow, edible, loose, Chicago	8.2	8.6	11.4	11.1	11.1
Tallow, inedible, packers' prime, c.a.f. delivered Chicago	4.7	5.6	8.2	7.8	8.3
Tallow, inedible, bleachable fancy, delivered, Chicago	5.0	5.8	8.8	8.4	8.8
Tallow, No. 1, inedible, delivered, Chicago	4.3	5.1	7.7	7.2	7.6
Tallow, special, inedible, tanks, delivered, New York	5.0	5.8	8.3	8.0	8.5
Tung oil, imported, drums, f.o.b. New York	42.2	30.1	26.4	27.0	26.5
Tung oil, tanks, New York	40.2	28.1	24.4	25.0	24.6
Tung oil, domestic, tanks. f.o.b. mills	39.2	27.9	24.7	25.0	24.6
Retail prices 4/					
Butter	74.9	73.8	76.0	75.6	*
Margarine	27.5	26.0	26.5	27.5	
Cooking and Salad Oils	---	32.5	32.4	33.2	
Shortening	28.7	26.6	27.5	28.7	
Salad Dressing	38.0	5/74.4	5/72.8	5/73.2	
Peanut Butter	57.7	58.3	59.1	59.3	

1/ 3-cent processing tax suspended during October 1957-June 1966. 2/ Nearby futures. 3/ 3-cent processing tax suspended during July 1959-June 1966. 4/ Leading cities. New series, Consumer Price Index revised January 1964. 5/ Italian only.

*Not available as of March 29.

THE FATS AND OILS SITUATION

Approved by the Outlook and Situation Board, March 25, 1965

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SUMMARY

The 1964-65 soybean supply of 732 million bushels is in close balance with expected disappearance for the year. As a result, carryover of old-crop soybeans on September 30, 1965, is expected to be around 10 million bushels compared with 32 million last September 30. Soybean crushings for 1964-65 are still estimated at 470 million bushels and the export estimate remains at 205 million bushels. Soybean exports were at a standstill for 4 weeks during the recent dock strike (January and February) and cumulative inspections for the season fell below year-earlier levels. However, heavy export movement since the strike settlement has regained the lost ground and total exports for the marketing year probably will not be significantly affected.

Soybean prices (No. 1 yellow, Chicago) advanced from a monthly average of $2.73 per bushel in October 1964 to $3.00 in March 1965. Average for the first half of the marketing year was $2.91 per bushel compared with $2.75 during October-March 1963-64. Soybean prices are expected to continue strong during April-September 1965, averaging close to the first half's level and well above last year's second half average of $2.58 per bushel. Current soybean supplies are less than last year and crusher and exporter demands during the balance of the marketing year are expected to be greater than a year ago.

Wholesale prices of edible vegetable oils (cottonseed and soybean) averaged 12 cents per pound during October-March 1964-65, compared with 9 cents a year earlier. Lard prices during the same period averaged 11 cents per pound compared with 9 cents a year earlier. World prices of edible fats and oils are also higher this year than last. Prices of U. S. edible oils and lard have already displayed most of the increase expected for them for the entire 1964-65

marketing year. Prices probably will remain on this higher plateau and during the spring and summer months may average sharply above last year's relatively low level.

Higher food fat prices this year stem from slightly smaller U. S. supplies coupled with record export and domestic demands. Carryover stocks of food fats next October 1 are expected to be the smallest since 1960, mainly reflecting reduced stocks of cottonseed oil, soybean oil, and soybeans.

The recent dock strike has had little effect on edible oil and lard prices even though it delayed export movement. These commodities are shipped mostly in tankers so the movement was not so adversely affected as for the grains.

Exports of edible vegetable oils for the 1964-65 marketing year are still estimated at 2 billion pounds compared with 1.7 billion last year. Exports under the Food for Peace Program may total around 1.1 billion pounds compared with 0.9 billion in 1963-64. Soybean oil probably will account for about two-thirds of the total. Dollar exports are expected to be slightly higher than in 1963-64 with the return of Spain to the U. S. market after a year's absence. Spain had a very small 1964 olive crop.

REVIEW AND OUTLOOK

1965 Oilseed Acreage to Rise as Soybeans Increase Again

Farmer's planting intentions reported as of March 1 showed a sharp increase in 1965 soybean acreage that more than offset declines in each of the 3 other oilseed crops. Indicated acreage for the 4 oilseeds is 52.9 million acres--4 percent greater than in 1964 (table 2).

Soybean growers intend to plant a record 34.3 million acres, 8 percent above the 31.7 million acres planted in 1964. This is the 5th consecutive year of record high acreages. All sections, except the minor producing North Atlantic States, anticipate an increase from a year earlier. The North Central and South Central States expect acreage increases of 8 percent and the South Atlantic States, 7 percent, but a decline of 1 percent is expected in the North Atlantic States.

Growers in the North Central Region, which accounts for about 72 percent of the Nation's total soybean acreage, expect increases in all States. Illinois, the largest soybean producing State, indicates a 3 percent acreage expansion--smallest percentage increase in the region. Increases in other heavy producing States are as follows: Minnesota, 12 percent; Iowa, 11 percent; Ohio, 10 percent; Missouri, 7 percent, and Indiana, 5 percent. For the fringe States of this region, acreages in Kansas, South Dakota, and Michigan, are up 20 percent while Nebraska expects an increase of 19 percent and Wisconsin 18 percent.

Table 2.--Oilseeds: Prospective plantings for 1965 (based on March intentions of farmers) with comparisons, 1949-64

Year	Soybeans				Cottonseed			
	Acreage		Production		Cotton acreage		Cottonseed Production	
	Planted 1/	Harvested for beans	Per acre harvested	Total	Planted	Harvested	Per acre harvested	Total
	1,000 acres	1,000 acres	Bushels	Million bushels	1,000 acres	1,000 acres	Pounds	1,000 tons
1949	11,872	10,482	22.3	234.2	28,283	27,439	482	6,614
1950	15,048	13,807	21.7	299.2	18,866	17,843	460	4,105
1951	15,176	13,615	20.8	283.8	29,353	26,949	467	6,302
1952	15,958	14,435	20.7	298.8	28,065	25,921	478	6,191
1953	16,394	14,829	18.2	269.2	26,872	24,341	554	6,749
1954	18,541	17,047	20.0	341.1	20,052	19,251	593	5,709
1955	19,674	18,620	20.1	373.7	17,991	16,928	714	6,043
1956	21,700	20,620	21.8	449.3	17,077	15,615	693	5,407
1957	21,938	20,857	23.2	483.4	14,310	13,558	680	4,609
1958	25,108	23,993	24.2	580.2	12,379	11,849	810	4,798
1959	23,349	22,631	23.5	532.9	15,833	15,117	793	5,991
1960	24,449	23,655	23.5	555.3	16,080	15,309	769	5,886
1961	27,815	27,008	25.2	679.6	16,588	15,634	765	5,978
1962	28,448	27,604	24.2	669.2	16,293	15,569	789	6,139
1963	29,459	28,580	24.5	699.4	14,843	14,212	872	6,192
1964 2/	31,677	30,738	22.8	699.9	14,843	14,058	900	6,333
1965 3/	34,266	---	---	4/829	14,294	---	---	---

Year	Flaxseed				Peanuts				Total 4 oilseeds
	Acreage		Production		Acreage		Production		
	Planted	Harvested	Per acre harvested	Total	Planted 1/	Harvested for nuts	Per acre harvested	Total	Acreage planted
	1,000 acres	1,000 acres	Bushels	Million bushels	1,000 acres	1,000 acres	Pounds	Million pounds	Million acres
1949	5,348	5,048	8.5	43.0	2,762	2,308	808	1,865	48.3
1950	4,274	4,090	9.8	40.2	2,633	2,262	900	2,035	40.8
1951	4,116	3,904	8.9	34.7	2,510	1,982	837	1,659	51.2
1952	3,445	3,304	9.1	30.2	1,838	1,443	940	1,356	49.3
1953	4,759	4,570	8.2	37.7	1,796	1,515	1,039	1,574	49.8
1954	5,947	5,663	7.3	41.3	1,824	1,387	727	1,008	46.4
1955	5,148	4,914	8.2	40.4	1,882	1,669	928	1,548	44.7
1956	5,786	5,473	8.6	47.0	1,834	1,384	1,161	1,607	46.4
1957	5,481	4,793	5.2	25.1	1,746	1,481	969	1,436	43.5
1958	3,862	3,679	10.2	37.4	1,702	1,516	1,197	1,814	43.1
1959	3,268	2,932	7.2	21.2	1,598	1,453	1,092	1,588	44.0
1960	3,437	3,342	9.1	30.4	1,542	1,410	1,266	1,786	45.5
1961	2,975	2,514	8.8	22.2	1,539	1,410	1,234	1,740	48.9
1962	3,102	2,808	11.5	32.2	1,531	1,412	1,282	1,810	49.4
1963	3,391	3,183	9.8	31.2	1,529	1,409	1,435	2,022	49.2
1964 2/	2,972	2,831	8.6	24.4	1,515	1,397	1,551	2,167	51.0
1965 3/	2,838	---	---	5/27	1,514	---	---	6/2,229	52.9

1/ Acreage grown alone for all purposes. 2/ Preliminary. 3/ Indicated. 4/ If the same proportion of total acreage of soybeans is harvested for beans as in 1964 and an average yield per harvested acre, with an allowance for trend, is obtained. 5/ Based upon average yields per acre with an allowance for trend. 6/ Based on the 1959-63 average ratio of acres harvested for nuts to acres planted alone and the average yield per acre with an allowance for trend.

The prospective increase in the 1965 soybean acreage probably is largely due to the higher prices producers received for 1964 soybeans, and also due to acreage released from the Conservation Reserve.

If U. S. growers plant their intended acreage of soybeans and the proportion of the total acreage harvested for beans is about the same as last year (97 percent) about 33.2 million acres would be harvested for beans. Based on an average yield per harvested acre with an allowance for trend, U. S. production of soybeans from this intended acreage would be about 829 million bushels, a record high. Both 1963 and 1964 soybean production was about 700 million bushels. A 1965 crop this size would bring estimated 1965-66 soybean supplies to about 839 million bushels compared with 732 million in 1964-65 (table 3, pg 9).

Supplies of cottonseed available for crushing in 1965-66 may not be greatly different from that in 1964-65 if cotton growers follow through with their March 1 intentions. The 1965 cotton acreage to be planted is indicated at 14.3 million acres compared with the 14.8 million acres planted in 1964 and the 14.1 million acres actually harvested in 1964. Upland acreage allotments this year of 16.2 million acres are the same as last year.

Flaxseed growers intend to plant 2,838,000 acres of flax in 1965, about 5 percent below the 1964 seeded acreage and the lowest acreage since 1946. Acreage decreases are expected in the primary producing States as follows: North Dakota, 5 percent; South Dakota, 2 percent and; Minnesota 8 percent. However, because flax can be seeded later in the season than most crops, farmers' success in seeding other spring crops will affect final flax acreage.

If growers carry out present intentions and yields per acre are average with an allowance for trend, flaxseed production would total 27.0 million bushels compared with 24.4 million in 1964. With a smaller carryover in prospect, a crop this size would bring 1965-66 flaxseed supplies to an estimated 32 million bushels compared with 37.5 million in 1964-65.

Peanut growers intend to plant 1,514,400 acres of peanuts alone in 1965, about the same as the 1,515,300 acres planted last year. Acreage of peanuts planted alone includes peanuts to be harvested for nuts, hay, and hogging off, as well as for other purposes.

Peanuts are under controls and acreage allotments by States are about the same as in 1964. The Virginia-Carolina acreage is expected to be unchanged but an increase in the Southeast, chiefly Alabama, about offsets a decline in New Mexico in the Southwestern peanut area.

Assuming an average ratio of acres harvested for nuts to acres planted alone and an average yield per acre with an allowance for trend, the 1965 peanut production would be 2,229 million pounds compared with 2,167 million pounds in 1964.

Some Substitute Oilseed Crops Authorized on 1965 Wheat and Feed Grain Diverted Acres

The USDA announced on February 4, 1965, that farmers participating in the 1965 Wheat and Feed Grain Programs again may substitute specified crops (not in surplus) on land diverted from wheat and feed grain production. The special crops are guar, sesame, safflower, sunflower, castorbeans, and flaxseed, plus mustard seed on feed grain acreage. The plantings on wheat cropland can be done only on that acreage voluntarily diverted below the farm's 1965 effective allotment.

The law permits acreage diverted from feed grains to be utilized for specified annual non-price supported field crops and flaxseed when they are not in surplus supply and would not be in surplus, if produced on diverted acreage. The same crops can be planted on diverted wheat acreage (except mustard seed which is not provided for under legislation). Price support by law is not available for flax production on diverted acreage. The other substitute crops are not price-supported.

All of the substitute crops in 1965 will receive the same portion of the diversion payment as in 1964. Flaxseed, which has not been included since the 1963 program, again is being added to the list. Safflower will continue without payment.

Following are the percentages of the individual farm acreage diversion payment rate which will be made for authorized plantings on diverted acres for the 1965 crop year, compared with those in effect in 1964:

	Feed Grain Program		Wheat Program	
	1965	1964	1965	1964
Guar	50	50	50	50
Sesame	50	50	50	50
Safflower	*	*	*	*
Sunflower	30	30	30	30
Castorbeans	1/50	50	1/50	50
Flaxseed	*	---	*	---
Mustard Seed	30	30		
Crambe Seed	2/30	---		

1/ Castorbean rate originally announced at 30 percent but on March 16, 1965, USDA increased partial payment rate to 50 percent. 2/ Crambe, a member of the mustard family, was approved for planting on 1965 diverted feed grain acreage by the Secretary on March 19, 1965.

*Planting permitted.

Soybean Prices to Continue Strong; Supply to Remain Tight

Supplies of soybeans available during April-September will be somewhat smaller than in the second half of the 1963-64 marketing year while requirements this year will be greater. This means that the supply situation will tighten before new-crop soybeans are available, usually around mid-September. Therefore, prices to farmers likely will continue strong as crushers and exporters compete for the dwindling supply of beans this year.

Soybean prices to farmers have increased from $2.55 per bushel last October to $2.81 in February 1965, averaging $2.67 per bushel so far this marketing year compared with $2.60 last year. Crushing and export demands (in spite of the dock strike) were strong. Stocks of soybeans at crushing plants on March 1, 1965, totaled 134 million bushels compared with 79 million on the same date last year. While most of the seasonal rise in soybean prices probably has occurred, prices to farmers will likely continue strong this spring and summer, averaging sharply above the $2.39 per bushel received during April-September 1964. The favorable market price of soybeans this year was a dominant factor that encouraged farmers to expand their 1965 soybean acreage, as reflected in the March 1 planting intentions report. The 1965-crop soybeans will be supported at $2.25 per bushel, the same as in the past 3 years.

Through February, farmers placed 28.6 million bushels of 1964-crop soybeans under loan compared with 69.6 million in the same period a year earlier. Farmers had redeemed 8.2 million bushels, leaving 20.4 million outstanding the end of February. CCC takeover of 1964-crop soybeans is expected to be negligible because of the high market prices. There will be no reseal program for 1964 crop soybeans. The maturity date of the program is July 31, 1965.

Soybean Crushings and Exports Up

The supply of soybeans for the 1964-65 marketing year is placed at 732 million bushels compared with 714 million a year ago. The increase is due to larger beginning stocks on October 1, 1964 (table 3).

Soybean crushings in October-February 1964-65 totaled 212 million bushels, 12 percent above last year and 2 percent above the 1962-63 record for this period. Crushings during October-January were maintained at the monthly rate of 43-44 million bushels. They dropped to 38 million in February 1965 due to the dock strike, which forced a buildup in meal stocks, and to fewer working days. Crusher demand is greater this marketing year than last because (1) soybean oil stocks are down sharply, (2) domestic disappearance and exports of both soybean oil and meal are up significantly, and (3) soybean oil prices are averaging higher, by a third.

Soybean crushings during March-September will decline seasonally but will be maintained above last year's level. Crushings for all of 1964-65 are

Table 3 .--Soybeans: Supply and disposition, crop years, 1956-64

Item	Year beginning October									
	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/	1965 2/
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.
Supply										
Stocks, October 1	3.7	9.9	21.1	62.1	23.2	6.0	57.6	15.1	32	10
Production	449.3	483.4	580.2	532.9	555.3	679.6	669.2	699.4	700	829
Total supply	453.0	493.3	601.3	595.0	578.5	685.6	726.8	714.4	732	839
Disposition										
Seed, feed and residual	41.7	32.9	27.9	37.0	40.2	36.0	56.9	50.4	47	
October-February:										
Crushings	136.5	143.9	172.1	170.5	184.4	191.0	207.1	189.7	212	
Exports	48.6	50.3	55.8	68.6	76.6	82.0	91.5	96.1	93	
March 1, supply remaining	226.2	266.2	345.5	318.9	277.3	376.6	371.3	378.2	380	
March-September:										
Crushings	179.4	209.9	229.1	222.9	217.8	247.8	267.4	251.2	258	
Exports	36.7	35.2	54.3	72.8	53.5	71.2	88.8	95.0	112	
Season totals										
Crushings	316.0	353.8	401.2	393.4	402.2	438.8	474.5	440.9	470	
Exports	85.4	85.5	110.1	141.4	130.1	153.2	180.3	191.1	205	
Ending stocks										
Commercial	4.7	7.2	4.5	13.5	6.0	6.6	13.4	21.4	10	
Reseal	---	---	13.4	---	---	11.0	---	10.6	0	
CCC	5.2	13.9	44.2	9.7	---	40.0	1.7	---	0	
Total	9.9	21.1	62.1	23.2	6.0	57.6	15.1	32.0	10	
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
Price per bushel										
Support	2.15	2.09	2.09	1.85	1.85	2.30	2.25	2.25	2.25	2.25
Received by farmers	2.18	2.07	2.00	1.96	2.13	2.28	2.34	2.51	3/2.65	

1/ October-February is partly estimated. Disposition through the rest of the crop year is forecast. 2/ Forecast. Production estimate based on March 1 planting intentions and 1959-63 average yield per acre. 3/ Preliminary.

Table 4.--Cottonseed: Supply and disposition, crop years, 1956-64

Item	Year beginning August									
	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/	1965 2/
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Supply										
Stocks, August 1	177	164	175	100	105	188	280	234	170	200
Production	5,407	4,609	4,798	5,991	5,886	5,978	6,139	6,192	6,333	
Total supply	5,584	4,773	4,973	6,091	5,991	6,166	6,419	6,426	6,503	
Disposition										
Seed, feed and residual	450	343	430	487	446	340	342	362	298	
August-February:										
Crushings	3,785	3,226	3,290	4,018	3,859	3,869	4,251	4,128	3,979	
Exports	9	3	2	4	3	4	7	4	1	
March 1, supply remaining	1,340	1,199	1,251	1,582	1,684	1,953	1,819	1,932	2,225	
March-July:										
Crushings	1,174	1,021	1,149	1,473	1,493	1,670	1,582	1,758	2,021	
Exports	2	3	2	4	2	3	3	4	4	
Season totals										
Crushings	4,959	4,247	4,439	5,491	5,352	5,539	5,833	5,886	6,000	
Exports	11	6	4	8	5	7	10	8	5	
Ending stocks	164	175	100	105	188	280	234	170	200	
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
Price per ton										
Support 3/	44.00	42.00	41.00	34.00	34.00	45.00	44.00	44.00	44.00	43.00
Received by farmers	53.40	51.10	43.80	38.80	42.60	51.10	47.90	50.70	4/46.80	

1/ August-February is partly estimated. Disposition through the rest of the year is forecast. 2/ Forecast. 3/ Purchase Price, Basis Grade. 4/ Preliminary.

expected to total around 470 million bushels compared with 441 million a year earlier and the record of 475 million bushels in 1962-63. A crush this size would produce 5,100 million pounds of crude soybean oil (assuming yield of 10.85 pounds per bushel) and 11.2 million tons of soybean meal (assuming yield of 47.7 pounds per bushel).

Based on inspections, soybean exports from October 1, 1964, through March 19, 1965, totaled 109 million bushels, 4 million more than last year. This occurred in spite of a 4-week standstill from mid-January through mid-February due to the dock strike. Prior to the strike, weekly inspections were 10 million bushels ahead of last year, but by settlement, they had fallen 6 million bushels behind. Soybean exports for all of 1964-65 probably will not have been significantly affected by the dock strike. The estimate remains at 205 million bushels compared with 191 million in 1963-64.

The countries of Western Europe, Japan, Canada, and Israel continue to be the major foreign markets for U. S. soybeans. In 1963-64, these countries accounted for nearly 95 percent of U. S. soybean exports. These economically advanced dollar markets desire U. S. soybeans for use as meal in animal feeds, and as edible oil in food products such as liquid cooking and salad oils, margarine, and shortening.

Japan will continue to remain the largest single foreign outlet for U. S. soybeans in 1964-65. Although Japan's use for soybeans and their products is expanding rapidly, much of this increased need has been met since 1961 by soybean imports from Communist China. Imports of soybeans by Japan from Communist China have increased from 1.6 million bushels in 1961 to 10.4 million bushels in 1964. Recent trade negotiations indicate Japan may import about 13 million bushels of soybeans from Communist China in 1965. The chief attraction of Chinese soybeans is a lower price. Japan prefers the higher quality and oil content of U. S. soybeans for crushings.

Soybean exports by Communist China may be slightly larger in 1964-65. Both its acreage and its yields were thought to have increased in 1964; if so, Communist China may be encouraged to increase exports of soybeans to Japan and Europe to help pay for its substantial imports of wheat.

Based on a crush of 470 million bushels, exports of 205 million bushels, and allowing about 47 million bushels for seed, feed, and loss, the carryover of old-crop soybeans on September 30, 1965, would be around 10 million bushels compared with 32 million last September 30. A soybean carryover of 10 million bushels is less than 1 week's requirements for crushing and export.

Domestic Disappearance of Soybean Oil Above Last Year; Oil Prices to Remain Higher

The 1964-65 supply of soybean oil is estimated at 5.7 billion pounds, about the same as a year earlier, as increased production this year is tending to offset smaller starting stocks on October 1, 1964 (see table 6, page 16). Domestic use is expected to total 4.0 billion pounds and exports about 1.3 billion, resulting in expected carryover stocks on September 30, 1965, of around 0.4 billion pounds (crude and refined). This would be the smallest since the 0.3 billion pounds in 1960, excluding finished product stocks.

Domestic disappearance of soybean oil during October-January 1964-65 totaled 1,415 million pounds compared with 1,310 million a year earlier. Increased usage in salad and cooking oils the first 4 months of the current marketing year more than offset declines in the consumption of bean oil in margarine and shortening manufacture. Higher prices this year than last probably contributed to the drop, as both margarine and shortening output was about unchanged. The production of soybean salad and cooking oils during October-January 1964-65 totaled 529 million pounds, 36 percent more than the 389 million pounds the same 4 months in 1963-64.

Industrys' effort to improve the quality of soybean oil through better processing techniques has resulted in an oil which may be used for most general food purposes. The USDA announced February 25, 1965, that improved flavor stability of soybean oil may result from 2 new laboratory hydrogenation techniques recently developed. Industrial adaptation of these techniques could significantly expand the use of soybean oil, particularly in commercial cooking and in export markets. In some foreign countries, the demand for salad and cooking oils has outstripped production. Flavor stability is especially important in cooking oils used in restaurants and in potato chips manufacture, where the oil is kept at high temperatures or heated and reheated repeatedly. It is also important in exported oils, which are exposed for long periods to air and storage temperatures that cause oxidation and deterioration of unstable oils.

Monthly average prices of soybean oil (crude, Decatur) jumped from 10.9 cents per pound in October 1964 to 12.2 cents in November and then remained at about this level. The October-March 1964-65 average was 11.8 cents per pound compared with 8.5 cents the first half of the 1963-64 marketing year. Soybean oil prices have already displayed most of the increase expected by them for the season. Prices probably will remain on this higher plateau, and for all of 1964-65 may average 3 cents or more above the 1963-64 level of 8.5 cents.

Soybean oil stocks usually increase sharply during the heavy fall-winter crushing period. This year, soybean oil stocks (crude and refined) increased from 578 million pounds on October 1, 1964, to only 587 million February 1, 1965. This increase is modest in view of the record crush. Stocks on February 1, 1964, totaled 1,022 million pounds.

Soybean Meal Disappearance Up As Prices Average Lower; Stocks Rise Attributed to Dock Strike

The 1964-65 supply of soybean meal is estimated at 11.3 million tons compared with 10.8 million for 1963-64. Domestic use is expected to total about 9.5 million tons (it was 9.2 million in 1963-64) and exports may reach a record 1.7 million (they were 1.5 million in 1963-64).

Production of soybean meal during October-February 1964-65 totaled 5,054,600 tons, up 526,500 tons from a year earlier. Exports during October-January (the latest data available), totaling 684,300 tons, were sharply up as compared with 467,600 tons in the same 4 months of 1963-64. Domestic use during October-January totaled 3,382,400 tons, 154,000 more than last year. Soybean meal stocks at processor's plants on March 1, 1965, at 220,400 tons, were 47,000 more than on the same date last year. Part of the stock rise is attributed to the recent 4-week dock strike which slowed soybean meal exports considerably.

Monthly average prices of soybean meal (44 percent protein, bulk, Decatur) have ranged between $66 and $70 per ton during October-March 1964-65, averaging $68 for the period compared with $75 the previous year. Prices during April-September 1965 probably will continue relatively stable, averaging above the $67-per-ton level of those months of 1964. High soybean prices, seasonal declines in output, and strong export demand are factors which will tend to hold soybean meal prices above the year-earlier level this spring and most of the summer.

Cottonseed Crushings Off Slightly But Seed Stocks Are Higher

Movement of 1964-crop cottonseed to crushing mills is nearly completed. During August-February 1964-65, oil mills received 5,745,100 tons of cottonseed, about 91 percent of the 1964 crop compared with 5,633,200 tons and 91 percent a year earlier. While oil mills have received slightly more cottonseed this season than last, they are crushing it at a slightly slower rate. Crushings during August-February totaled 3,979,100 tons compared with 4,128,400 tons the year before (table 4, page 9). Oil production during this period was 1,321 million pounds, 4 percent less than in 1963-64. Stocks of cottonseed at crushing plants totaled 1,934,400 tons on March 1, 1965, 11 percent more than on the same date last year.

The crush for all of 1964-65 is estimated at 6,000,000 tons (assuming that about 94 percent of the 1964 crop will move to oil mills for processing) compared with 5,886,200 tons in 1963-64. A crush this size is expected to produce about 2 billion pounds of crude cottonseed oil (using an oil yield of 335 pounds per ton) and 2.8 million tons of cake and meal (using a meal yield of 940 pounds per ton); both amounts are a shade above 1963-64.

The supply of cottonseed oil in 1964-65 is estimated at 2.6 billion pounds, 5 percent more than a year earlier and the largest since the 1954-55 season. The increase over last year is mainly due to larger starting stocks--611 million pounds (crude and refined) on August 1, 1964, compared with 514 million a year earlier. The increase in the inventory was in CCC hands.

Domestic use of cottonseed oil is placed at 1.5 billion pounds in 1964-65 compared with 1.4 billion last season. Cooking and salad oil is the major outlet and now accounts for about three-fifths of domestic disappearance compared with one-third in 1947. More cottonseed oil is being used in the manufacture of cooking and salad oils and shortening this year than last year.

Exports of cottonseed oil in 1964-65 are estimated at 700 million pounds compared with 483 million a year ago. This increase largely reflects heavier exports under Title III, P. L. 480 foreign donations. The CCC acquired about 165 million pounds under the 1963 price support program. The Corporation has sold its once-refined cottonseed oil and has purchased a fully refined salad oil for movement into the foreign donations program.

Based on above estimates for domestic use and exports, carryover stocks of cottonseed oil (crude and refined) on August 1, 1965, will be around 400 million pounds, a third less than a year earlier and the lowest since August 1, 1962.

Cottonseed Oil Prices Advance; Stocks 30 Percent Less Than Last Year

Cottonseed oil prices (crude, Valley points) have risen steadily from 10.3 cents per pound in August 1964 to 13.1 cents in March 1965, averaging 11.7 cents for the 8-month period or about 2.0 cents above prices of the previous year. Both domestic and export demands have been strong this marketing year, reducing stocks below year-earlier levels. Stocks of cottonseed oil (crude and refined) on February 1, 1965, totaled 518 million pounds, 30 percent less than the 740 million on hand the same date in 1964. The increased disappearance rate so far this season is partly due to the favorable competitive price relationship of cottonseed oil to other oils. The price premium of cottonseed oil over soybean oil during August-March 1964-65 averaged a half cent per pound compared with 1 cent the year before. Cottonseed oil supplies are becoming smaller as the marketing year progresses and a widening of the differential is likely. Prices of cottonseed oil during April-July 1965 probably will average around a third above the 10.3 cents per-pound level last year.

Cottonseed meal prices (41 percent protein, bulk, Memphis) have remained fairly steady so far this marketing year, varying between $59 and $63 per ton, or about 10 percent under the August-February 1963-64 average. Prices started weakening in early March 1965, averaging $56 per ton compared with $61 in March 1964. Average prices during April-July 1965 probably will not differ greatly from the $55 per ton level of 1964. Output is dropping seasonally and demand likely will remain good as the cattle supply continues large. A record-high 107.2 million cattle and calves were on farms on January 1, 1965--about 0.5 million head more than a year earlier. Domestic disappearance of cottonseed meal is running about the same as last year while exports are higher.

Edible Oil Exports for 1964-65 Placed at 2.0 Billion Pounds

Cottonseed and soybean oil supplies (crude and refined) for 1964-65 are estimated at 8.1 billion pounds, roughly the same as in 1963-64, as increased production tends to offset smaller starting stocks on October 1, 1964 (table 6). Domestic use is placed at 5.5 billion pounds and exports at 2.0 billion, leaving estimated carryover stocks of 0.6 billion pounds on September 30, 1965. This compares with 1.0 billion pounds on the same date last year, 1.4 billion on September 30, 1963, and the 1955-60 average of 0.5 billion pounds.

The estimate of cottonseed and soybean oil exports during 1964-65 remains at 2.0 billion pounds, about 18 percent more than exports in 1963-64. Shipments of edible oils under the Food-for-Peace Program may total around 1.1 billion pounds, compared with 0.9 billion in 1963-64. Soybean oil is likely to account for about two-thirds of the total. Prospective exports of these oils are shown in table 5.

Table 5.--Cottonseed and soybean oils: Dollar and Food-for-Peace exports, 1964-65 forecast compared with 1962-63 and 1963-64

Export financing	Year beginning October								
	1962-63 1/			Preliminary 1963-64 1/			Forecast 1964-65 1/		
	SBO	CSO	Total	SBO	CSO	Total	SBO	CSO	Total
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Dollars 2/	515	208	723	503	323	826	525	350	875
Food for Peace:									
(P. L. 480)									
Title I	526	129	655	413	220	633			600
Title II	40	16	3/56	27	7	34			50
Title III 4/	68	29	97	50	33	83			5/350
Title IV	13	---	13	111	1	112			125
Total P. L. 480	647	174	821	601	261	862	775	350	1,125
Grand Total	1,162	382	1,544	1,104	584	1,688	1,300	700	2,000

1/ Partly estimated. 2/ Includes some AID. 3/ Excludes 7 million pounds shortening shipped under Title II. 4/ Donations and barter. 5/ Includes 150 million pounds as barter and 200 million pounds foreign donations.

Exports of edible vegetable oils during October-January 1964-65 totaled 716 million pounds (including 46 million pounds for Title III foreign donations not reported by Census during October-December) compared with 420 million pounds a year earlier. In January 1965, Census started reporting foreign donations. The recent dock strike at the Gulf and Atlantic ports has adversely affected exports of oil but not as much as soybeans and other grain because oils are shipped mostly in bulk aboard tankers. The strike began January 10, 1965, and ended at most ports in mid-February and at the remainder on March 7. Soybean oil exports during October-January 1964-65 totaled 455 million pounds or 63 percent of the total. Edible oil exports during February-September 1965 are expected to approximate the 1.3 billion pounds shipped abroad during the same period last year, mainly due to an expected heavy movement under Title I of P. L. 480.

Through March 25, 1965, purchase authorizations had been issued for about 500 million pounds of cottonseed and soybean oils under Titles I and IV for export during the current marketing year. About one-half of the programmed oil has been shipped so far. The major program countries are Pakistan, India, Turkey, Greece, Guinea, Israel, UAR, and Chile.

Vegetable oil barter program (Title III) announcements since October 1, 1964, have totaled nearly 90 million pounds. Barter transactions thus far have been made with the Canary Islands, Jamaica, Haiti, Morocco, Argentina, Australia, Greece, Ecuador, Sweden, and Iraq. Total 1964-65 exports of edible oils under barter programs are expected to total about 150 million pounds, up sharply from the 31 million in 1963-64. Vegetable oil exports under Title III foreign donations are expected to total about 200 million pounds, up sharply from 52 million in 1963-64.

Dollar exports of edible vegetable oils for all of 1964-65 are expected to total around 875 million pounds, up slightly from the year before. Northern Europe, Spain, and Iran are the leading dollar markets for these oils. Exports of soybean oil to Spain, during October-January 1964-65 totaled 142 million pounds, reflecting the short olive crop in that country. Spain did not import U. S. soybean oil during 1963-64.

Lard Output Below Last Year; Prices a Fifth Higher

Commercial hog slaughter during October-February 1964-65 totaled 36.2 million head, about 4 percent below the 37.8 million head last season. In this same period, commercial lard output was 1,010 million pounds, about 5 percent below last year. The decline in output is mainly due to reduced slaughter, as lard yield per hog at 28.0 pounds, is practically the same as a year earlier. Lard production (including farm) for the entire 1964-65 marketing year is estimated at 2,375 million pounds, compared with 2,482 million in 1963-64.

Domestic disappearance of lard (including farm) for the 1964-65 marketing year, is estimated at 1,675 million pounds, about 7 percent below 1963-64. Most of this drop will be in the direct use of lard. However, use in shortening and margarine may also show some decline, due to the higher lard prices.

Table 6.--Food fats and oils: Supply and disposition, 1956-64

Item	Year beginning October									
									Forecast*	
	1956	1957	1958	1959	1960	1961	1962	1963 1/	1964	1965
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Stocks, October 1										
Soybeans--oil equivalent 2/	41	109	231	680	256	66	634	166	352	3/110
Butter	90	145	146	93	136	238	4/419	4/450	4/188	188
Lard	123	69	46	93	92	100	73	81	68	68
Cottonseed oil	254	146	154	190	217	170	296	488	433	233
Soybean oil	227	286	281	298	308	677	618	920	578	378
Other 5/	66	49	56	60	78	94	128	182	118	93
Sub-total	760	694	6/683	734	830	1,279	1,534	2,121	1,385	960
Finished products 7/	129	113	118	142	156	249	8/442	314	205	150
Total food fats and oils	889	807	801	876	987	1,528	1,976	2,435	1,590	1,110
Imports	52	70	74	66	81	91	55	73	75	
Production										
Butter	1,527	1,502	1,413	1,435	1,488	1,596	1,491	1,450	1,500	
Lard	2,614	2,423	2,679	2,726	2,484	2,471	2,497	2,480	2,375	
Cottonseed oil 9/	1,629	1,420	1,589	1,832	1,786	1,952	1,930	1,939	2,000	
Soybean oil	3,431	3,800	4,251	4,338	4,420	4,790	5,091	4,822	5,100	
Other 5/ 9/	719	678	767	771	863	923	1,057	1,101	1,150	
Sub-total	9,920	9,823	10,700	11,102	11,041	11,731	12,066	11,792	12,125	
Soybean exports (oil equiv.)	937	939	1,209	1,552	1,431	1,685	1,983	2,102	2,250	
Total food fats and oils	10,857	10,762	11,909	12,654	12,472	13,416	14,049	13,894	14,375	
Total supply	11,798	11,639	12,784	13,596	13,540	15,035	16,080	16,402	16,040	
Exports 10/										
Butter	18	36	19	22	9	11/19	11/131	11/319	11/180	
Lard	590	461	608	716	513	508	571	706	700	
Cottonseed oil 9/	427	250	406	506	11/371	11/474	11/392	11/586	11/700	
Soybean oil	807	804	930	953	11/721	11/1,308	11/1,165	11/1,104	11/1,300	
Other 5/ 9/	62	19	34	43	11/40	11	15	87	125	
Adjustment 12/	61	85	117	88	83	77	93	111	125	
Sub-total	1,965	1,655	2,114	2,328	1,737	2,397	2,367	2,913	3,130	
Soybeans (oil equivalent)	937	939	1,209	1,552	1,431	1,685	1,983	2,102	2,250	
Total exports	2,903	2,593	3,323	3,880	3,168	4,082	4,350	5,015	5,380	
Domestic use										
Butter	1,458	1,467	1,449	1,373	1,379	1,400	1,331	1,395	1,320	
Lard 13/	2,039	1,994	2,204	2,005	1,968	1,985	1,908	1,792	1,675	
Cottonseed oil	1,310	1,195	1,147	1,299	1,461	14/ [1,352	1,347	1,407	1,500	
Soybean oil	2,565	3,051	3,304	3,376	3,329	[3,540	3,625	4,060	4,000	
Other 5/	722	719	796	773	912	968	1,040	1,150	1,125	
Adjustment 12/	-61	-85	-117	-88	-83	-77	-93	-111	-125	
Total 13/	8,033	8,341	8,603	8,739	8,965	9,168	9,158	9,693	9,495	
Total (calculated net) 15/	8,049	8,336	8,579	8,725	8,872	8,977	9,295	9,797	9,550	
Total use for food 16/	7,886	8,145	8,389	8,438	8,560	8,602	8,902	9,535		
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	
Per capita, civilian and military 17/										
Butter (Fat content)	6.9	6.8	6.6	6.1	6.1	6.1	5.7	5.9	5.5	
Other	37.7	38.5	39.4	39.3	39.2	38.7	39.8	42.5	40.6	
Total (fat content)	44.6	45.3	46.0	45.4	45.3	44.8	45.5	48.4	46.1	

1/ Preliminary. 2/ Not included in total stocks. 3/ Oil equivalent of 10 million bushels of soybeans. 4/ Includes estimates of butter oil, ghee, and canned butter not shown in cold storage stocks report. 5/ Includes beef fats, peanut, corn, olive and sesame oils. 6/ Adjusted to new Census basis which includes hydrogenated oils and stearin. 7/ Shortening and salad and cooking oils. 8/ Includes 100 million pounds of shortening and salad and cooking oils (75 million SBO and 30 million CSO) which was held by CCC on October 1, 1962 for foreign donations during 1962-63. 9/ Includes oil equivalent of oilseeds exported. 10/ Includes shipments. Butter, cottonseed oil and adjustments include quantities from CCC stocks that are not reported in Census data. 11/ Includes estimates of foreign donations of fats and oils, not reported by Census. 12/ Includes exports of processed food oils not classified by kind, shortening and other secondary fats. 13/ Adjusted for estimated changes in stocks of farm lard. 14/ Includes 180 million pounds of shortening and salad and cooking oils purchased by CCC for foreign donations but not exported in 1961-62. 15/ Adjusted to reflect changes in stocks of finished products. 16/ Excludes food fats used for non-food purposes, but includes non-food oils (mostly coconut and palm kernel) used in food. 17/ Adjusted for trade and changes in stocks of shortening, margarine and salad and cooking oils.

*Except for October 1, 1964 stocks.

From October 13, 1964, through March 18, 1965, USDA purchases of lard for distribution to needly families, schools, and institutions totaled 60 million pounds. This season, USDA lard purchases are running considerably below those of 1963-64 when a total of 110 million pounds were bought for domestic donations. USDA purchases of margarine (where lard is the main ingredient) for domestic distribution to needy families and charitable institutions totaled 26 million pounds from December 30, 1964, through March 25, 1965.

Lard exports during October-January 1964-65 totaled 184 million pounds compared with 178 million pounds for this same period in 1963-64. However, the dock strike adversely affected lard exports in January. Exports for that month totaled only 23 million pounds compared with 63 million in January 1964. About three-fourths of total U. S. lard exports move to the United Kingdom. For all of 1964-65, lard exports (including shipments) are estimated at 700 million pounds or nearly as high as in 1963-64.

Lard prices (tanks, loose, Chicago) in October-March 1964-65 averaged 11.2 cents per pound, 2 cents above the 9.2 cents in that period last season. Lard prices are expected to remain strong through the rest of the 1964-65 marketing year, averaging around 2 cents above the 9.4 cents per pound for April-September 1964. Currently, lard prices again are at a discount to soybean oil prices in line with the usual historical relationship. Last season at this time, lard was selling at a cent premium.

Flaxseed Crushings a Fifth Above Last Year; Increased Oil Output Added to Stocks

Flaxseed prices (No. 1, Minneapolis) increased from about $3.00 per bushel during July-September 1964 to $3.20 in November-December 1964; they have since held firm. The July-March 1964-65 average of $3.12 per bushel compares with $3.04 during the same 9 months last season. Late-March 1965 prices were about at the Minneapolis support rate of $3.13 per bushel. Linseed oil prices (raw, Minneapolis) have similarly strengthened, rising from 13.3 cents a pound in July 1964 to a high of 13.9 cents in November, where they have stabilized. Prices of flaxseed are expected to average close to the April-June 1964 level of $3.09 per bushel.

Through February, farmers placed 6.3 million bushels of 1964 crop flaxseed under the support program. Farmers had redeemed 1.3 million bushels, leaving 5.0 million bushels outstanding at the end of February 1965. Last year on that date, 11.8 million bushels of 1963-crop flaxseed was under support. The loan maturity date for 1964-crop flaxseed has been extended from March 31, 1965, (January 31, 1965, for Arizona and California) to June 30, 1965.

Flaxseed supplies for the current marketing year which began July 1, 1964, are placed at 38 million bushels, 2 million below those of last season. Crushings probably will total around 22 million bushels, compared with 19 million last season. Exports are placed at 8 million bushels (6 million were shipped before the Great Lakes closed for the winter). Last year, flaxseed exports totaled 3.6 million bushels. Another 2 to 3 million bushels will be used as seed for planting the 1965 crop, leaving about a 5-million carryover next July 1, mostly in commercial hands. In addition, CCC likely will be holding the 80 million pounds of linseed oil (equivalent of 4 million bushels of flaxseed) acquired through a toll crush program for 1963-crop flaxseed.

The flaxseed crush during July-February 1964-65 was 14.8 million bushels, 2.6 million more than a year ago. The increase was due to the CCC toll crush program for 1963-crop flaxseed last summer. Linseed oil output during July-February 1964-65 was 296 million pounds compared with 248 million last year. The increased output this year has gone mainly into CCC inventory as total disappearance of linseed oil is about the same as a year ago. Stocks of linseed oil (raw, boiled, and other) on February 1, 1965, totaled 180 million pounds, 56 million above the same date in 1964.

Domestic disappearance of linseed oil during July-January 1964-65 totaled 206 million pounds compared with 208 million a year ago. For the entire marketing year, domestic use is estimated at 390 million pounds or about the same as in 1963-64. Exports for the current year are estimated at 25 million pounds compared with 14 million in 1963-64.

Currently a proposed revision of the U. S. Standards for flaxseed is under consideration by USDA. If accepted, the moisture content permitted in the numerical grades of flaxseed would be lowered from 11.0 to 9.5 percent. Also, for grades No. 1 and No. 2 flaxseed, the maximum limit for damaged seed would be reduced from 20 to 10 percent and from 30 to 15 percent, respectively. In addition, a maximum limit of 0.2 percent for heat-damaged seed would be permitted in grade No. 1 and 0.5 percent in grade No. 2 flaxseed. The proposal was published in the Federal Register for February 3, 1965. If the proposed changes are adopted, they would become effective on or about July 1, 1965.

Flaxseed PIK Program Held in Abeyance

On February 1, 1965, USDA announced issuance of regulations for the export Payment-in-Kind (PIK) program for flaxseed and linseed oil. These regulations became effective on February 4, 1965, the date they were published in the Federal Register.

With world supplies of flaxseed and linseed oil down and prices up, no export payments for either are scheduled under the PIK program. The flaxseed and linseed oil program will therefore serve in a standby capacity until such time as export payments might be needed to equal the difference between U.S. domestic market prices and those on the world market.

No immediate change in world prices is foreseen since world production of flaxseed in 1964 was down 9 million bushels from the year before and 9 percent less than the 1955-59 average. Lowest since 1961, this output reflects smaller crops of 3 of the 4 major producers--the United States, Canada, and India.

Should world prices fall below CCC support prices for U.S. flaxseed, export payments would be authorized in transferrable Payment-in-Kind certificates redeemable for an equal value of commodities from CCC stocks.

Although no export payments will be made under the program at present, exporters may redeem Export Commodity Certificates earned under other programs in CCC-owned flaxseed and linseed oil for export.

Inedible Tallow Prices Highest Since October 1951; Exports and Domestic Usage Continue Strong

Inedible tallow and grease production for 1964-65 is placed at 4.5 billion pounds, slightly above 1963-64. The increase is attributable to larger cattle slaughter, but at lower weights than last season. Domestic use of inedible tallow and grease is placed at 2.1 billion pounds and exports are estimated at 2.4 billion. Recently stocks have increased some, the buildup resulting in part from the dock strike which began January 10, 1965. On February 1, 1965, stocks totaled 427 million pounds compared with 387 million the same date last year.

During October-January 1964-65, inedible tallow and grease exports totaled 631 million pounds compared with 640 million for that period last year. However the strike adversely affected exports in January, which distorts the comparison between these 2 periods. Inedible tallow exports now account for over half of total U. S. production and are larger today than was the entire annual production of the late 1940's. This season, the major takers are Japan, the Netherlands, Italy, Spain, and West Germany. About 90 percent of all inedible tallow exports are for dollar sales. As of March 1, 1965, about 121 million pounds of inedible tallow remained to be shipped under existing P.L. 480 purchase authorizations (table 7).

Inedible tallow prices (prime, c.a.f. delivered, Chicago) during October-March 1964-65 averaged 7.9 cents per pound, compared with 5.7 cents for the first half of the 1963-64 marketing year. February 1965 prices, at 8.3 cents, were the highest monthly average since October 1951, when they were at the 9-cent level. During April-September 1965, inedible tallow prices are expected to average about a third above the 6-cent level for these months last season.

U. S. Exports of Fats and Oils in 1964 Exceed Imports By a Record 7.2 Billion Pounds

U. S. exports of all fats and oils (including oil equivalent of oilseeds) totaled a record 8.4 billion pounds in calendar 1964 while U. S. imports were 1.2 billion pounds (table 8). This gave the United States a 7.2 billion-pound favorable balance of trade compared with the 1956-60 average of

Table 7.--INEDIBLE TALLOW: Programs under Titles I and IV, P.L. 480 as of March 1, 1965

Country	P.A. Number	Purchase Authorization Quantity 1/	Final delivery date	Recorded shipments 2/ 3/	Still to be shipped
		Mil. lb.		Mil. lb.	Mil. lb.
Carry-in 10/1/64					
Title I Programs					
Guinea	57-26	1.6	11-30-64	1.6	---
Ivory Coast	65-01	15.4	12-31-64	5.4	10.0
Korea	24-106	19.9	10-31-64	19.9	---
Pakistan	15-158	56.2	3-31-65	15.5	40.7
Turkey	10-82	66.1	10-31-64	31.1	35.0
Total		159.2		73.5	85.7
Title IV Programs					
China, Taiwan	31-408	22.0	12-31-64	22.0	---
Ecuador	29-412	.3	6-30-64	.3	---
Total		22.3		22.3	---
Since 10/1/64					
Title I Programs 4/					
Guinea	57-34	2.2	2-28-65	1.9	.3
Colombia	25-47	6.6	2-28-65	---	6.6
U.A.R.	46-118	13.4	3-31-65	11.2	2.2
Total		22.2		13.1	9.1
Title IV Programs 5/					
Yugoslavia	11-414	26.5	4-30-65	---	26.5
Total		26.5		---	26.5
Grand total		230.2		108.9	121.3

1/ Estimate based on market price at time P.A. was issued.

2/ Based on bills of lading received for current month and prior months.

3/ February shipments: Guinea, (57-34) 1.9 million pounds and Pakistan, (15-158) 2.9 million pounds.

4/ India has an agreement for 110 million pounds, no P.A. issued.

5/ China, Taiwan has an agreement for 44.1 million pounds, no P.A. issued and Greece has an agreement for 8.8 million pounds, no P.A. issued.

Source: Livestock and Meat Products Division, FAS

4.1 billion and the 1951-55 average of 2.1 billion pounds. Before World War II (1937-41 average), the U. S. was a net importer of 1.5 billion pounds of fats and oils.

Domestic Use of Food Fats Sets Record High In 1964

Civilians in calendar 1964 took a record 8.9 billion pounds of food fats and oils (including only the fat content of butter and margarine), as measured by domestic disappearance, compared with 8.6 billion in 1963 (table 9). On a per capita basis, use in 1964 averaged about 47 pounds, a pound more than for 1963. Increases in cooking and salad oils, shortening and margarine more than offset a decline in butter. The direct use of lard held at the year-earlier per person rate. Retail prices for all food fats and oils products in 1964 averaged 3 percent below 1963 levels. (See tables 10 through 15 for 1964 statistics on margarine, butter, lard and shortening).

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Hearing Set on Proposed Marketing Agreement for Peanuts

The USDA announced on March 16, 1965 that a public hearing to consider a proposed marketing agreement for regulating the quality of peanuts will open Wednesday, April 7, at 9:30 a.m., in the Freer Art Gallery Auditorium, 12th St. and Independence Ave., S. W., in Washington, D. C. The proposed marketing agreement was recommended by representatives of producer and sheller organizations in each of the major production areas.

The program would provide for limiting the quality of peanuts milled or shipped for edible purposes. Included are provisions for inspection and identification, as well as for indemnities to handlers for losses arising from rejected lots. The program would be administered by an 18-member committee composed of 3 producers and 3 handlers from each of the 3 production areas.

If sufficient evidence is developed at the hearing to support the proposal -- or appropriate revisions of it -- and the Secretary of Agriculture approves it, the marketing agreement will be submitted for sign-up by handlers of peanuts. If made effective, the marketing agreement would supplement the acreage allotment and price support programs now administered by USDA.

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Table 8.--Imports and exports of fats, oils, oil-bearing materials and fat-and-oil products in terms of oil, calendar years 1962-64

Item	Imports for consumption					Exports 1/				
	Average					Average				
	1951-55	1956-60	1962	1963	1964	1951-55	1956-60	1962	1963	1964
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Food fats and oils										
Butter	.5	2.6	2.3	2.2	2.2	66.8	55.0	19.1	83.3	172.3
Lard	1.4	---	2/	2/	2/	610.6	608.7	488.2	594.2	746.0
Beef fats	.2	.9	.2	.1	1.2	33.3	21.3	10.2	8.6	10.2
Total, edible animal fats	2.1	3.5	2.5	2.3	3.4	710.7	685.0	517.5	686.1	928.5
Corn oil	.3	7.0	25.2	12.6	---	.6	---	---	---	---
Cottonseed oil	.1	---	2/	---	---	3/287.7	432.4	371.0	367.5	599.8
Cottonseed (17 percent)	---	---	---	---	---	4.2	2.9	3.6	2.0	2.9
Olive oil, edible	49.0	50.3	57.5	32.9	66.9	.1	---	---	---	---
Peanut oil	7.6	2.4	4.3	---	2/	17.7	10.8	.2	9.1	81.4
Peanuts, shelled (43.5 percent)	---	---	---	---	---	18.2	10.1	.5	1.9	13.9
Soybean oil	2/	---	---	---	---	197.3	836.8	1,213.6	1,069.9	1,272.3
Soybeans (18.3 percent)	2/	2/	2/	2/	2/	427.7	1,125.5	1,765.0	1,925.7	2,303.9
Other vegetable oils	6.1	7.9	10.9	13.4	13.4	35.8	20.7	28.1	41.6	53.7
Total, edible vegetable oils	63.1	67.6	97.9	58.9	80.3	989.3	2,439.2	3,382.0	3,417.7	4,327.9
Soap fats and oils										
Tallow, inedible	1.4	1.1	1.5	1.6	1.3	851.5	1,309.8	1,426.9	1,631.3	2,128.7
Greases	.9	.3	.2	1.5	.5	137.1	120.5	168.5	242.7	287.6
Fish and fish liver oils non-medicinal	7.0	1.2	5.6	3.0	4.4	97.8	128.4	123.1	263.5	151.5
Marine mammal oils	39.2	43.2	67.0	65.9	59.1	.3	1.7	5.5	9.6	5.6
Olive oil, inedible	2.8	.5	.3	.7	.2	.3	6.5	---	---	---
Palm oil	59.7	33.6	35.5	23.5	6.3	.3	---	---	---	---
Total, slow-lathering oils	111.0	79.9	110.1	96.2	71.8	1,087.3	1,566.9	1,724.0	2,147.1	2,573.4
Coconut oil	131.6	190.2	265.7	372.2	410.3	22.2	8.4	1.5	9.9	2.0
Copra (64 percent)	446.1	429.9	457.5	333.4	350.4	.1	.1	---	.1	2/
Palm kernel oil	32.5	60.2	84.2	83.5	85.1	---	---	---	---	---
Total, lauric-acid oils	610.2	680.3	807.4	789.1	845.8	22.3	8.5	1.5	10.0	2.0
Drying oils										
Flaxseed (35.7 percent)	2/	2/	2/	2/	2/	79.3	143.4	78.8	68.1	138.9
Linseed oil	2/	2/	2/	2/	2/	143.2	62.6	6.3	16.4	19.1
Oiticica oil	10.6	10.0	16.2	4.5	9.9	---	---	---	---	---
Tall oil	---	---	---	---	---	46.0	41.3	26.9	30.5	34.3
Tung oil	28.2	27.1	21.2	19.5	29.1	2.0	9.8	10.1	2.7	2.0
Total	38.8	37.1	37.4	24.0	39.0	270.5	257.1	122.1	117.7	194.3
Other industrial oils and fats										
Cashew nut shell liquid (oil)	10.5	6.8	12.0	8.6	---	---	---	---	---	---
Castor oil	96.0	103.5	105.6	97.6	96.4	1.0	2.2	.8	.8	1.1
Castor beans (46.5 percent)	54.1	10.7	9.4	2.4	2/	---	---	---	---	---
Fish-liver oils, medicinal	29.8	19.6	12.8	14.2	16.1	.4	.7	1.0	.7	.6
Rapeseed oil	5.2	3.4	4.1	3.0	5.8	.2	---	---	---	---
Wool grease	6.8	6.4	3.9	5.3	7.5	.2	---	---	---	---
Other vegetable oils and fats, inedible	11.6	.1	---	---	13.6	8.0	16.5	15.2	18.9	53.4
Total	214.0	150.5	147.8	131.1	139.4	9.8	19.4	17.0	20.4	55.1
Other oilseeds n.e.c. (30 percent) 4/	---	---	---	---	---	---	32.5	51.7	151.5	145.2
Other products										
Margarine (fat content)	.1	---	---	---	---	6.4	7.6	7.2	7.8	7.0
Shortening	2/	---	---	---	---	19.5	25.9	20.2	19.2	21.2
Cooking and salad oils	---	---	---	---	---	2.4	25.5	20.3	21.6	35.8
Salad products (fat content)	---	---	---	---	---	1.6	3.2	3.7	3.5	4.3
Soap (fat content)	.8	1.1	1.6	1.6	2.2	29.4	22.1	15.8	16.4	19.6
Fatty acids	2.7	1.2	4.1	5.6	7.2	29.2	34.0	48.8	40.8	64.3
Total	3.6	2.3	5.7	7.2	9.4	88.5	118.3	116.0	109.3	152.2
Grand total 5/	1,042.8	1,021.2	1,208.9	1,109.0	1,189.0	3,178.4	5,126.9	5,932.0	6,659.8	8,378.5

1/ Includes re-exports but not shipments. Shipments average about 90 million pounds per year of which approximately 60 million are lard.

2/ Less than 50,000 pounds.

3/ Includes exports from CCC holdings that are not reported by Census.

4/ Mainly safflower seed.

5/ Computed from unrounded numbers.

Note-Data in this table reported by Census. Does not include USDA estimates of foreign donations, starting in 1961, that are shown in some other tables.

Table 9.--Fats and oils: Use in products for civilian consumption, 1935-64

Year	Food products													
	Butter (Actual weight)		Lard, excluding use in margarine, shortening, and nonfood products		Margarine (Actual weight)		Shortening		Cooking and salad oils 1/		Edible oils 2/		All food products 3/	
	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita
	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.
Average 1935-39	2,196	17.0	1,424	11.0	371	2.9	1,519	11.8	4/		844	6.5	5,857	45.4
1940	2,244	17.0	1,901	14.4	318	2.4	1,185	9.0	4/		983	7.4	6,131	46.4
1941	2,116	16.1	1,819	13.8	364	2.8	1,367	10.4	4/		1,087	8.2	6,270	47.6
1942	2,092	15.9	1,688	12.8	364	2.8	1,237	9.4	4/		996	7.6	5,900	44.9
1943	1,525	11.8	1,679	13.0	501	3.9	1,234	9.6	4/		861	6.7	5,411	42.0
1944	1,532	11.9	1,583	12.3	497	3.9	1,147	8.9	4/		886	6.9	5,255	40.9
1945	1,413	10.9	1,509	11.7	525	4.1	1,175	9.1	4/		801	6.2	5,049	39.1
1946	1,456	10.5	1,640	11.8	533	3.9	1,409	10.2	4/		882	6.4	5,537	40.0
1947	1,600	11.2	1,792	12.6	713	5.0	1,338	9.4	4/		988	6.9	5,986	42.0
1948	1,450	10.0	1,850	12.7	887	6.1	1,410	9.7	4/		1,037	7.1	6,183	42.6
1949	1,549	10.5	1,744	11.8	851	5.8	1,435	9.7	4/		1,163	7.9	6,287	42.6
1950	1,614	10.7	1,891	12.6	918	6.1	1,656	11.0	4/		1,297	8.6	6,890	45.9
1951	1,445	9.6	1,855	12.3	996	6.6	1,365	9.0	4/		1,168	7.7	6,366	42.1
1952	1,316	8.6	1,817	11.8	1,219	7.9	1,562	10.2	4/		1,339	8.7	6,765	44.1
1953	1,329	8.5	1,772	11.4	1,256	8.1	1,597	10.2	4/		1,415	9.1	6,876	44.1
1954	1,410	8.9	1,627	10.2	1,346	8.5	1,870	11.8	4/		1,514	9.5	7,238	45.5
1955	1,460	9.0	1,639	10.1	1,323	8.2	1,863	11.5	4/		1,704	10.5	7,447	45.9
1956	1,439	8.7	1,623	9.8	1,354	8.2	1,797	10.9	4/		1,800	10.9	7,475	45.2
1957	1,406	8.4	1,589	9.4	1,446	8.6	1,756	10.4	4/		1,824	10.8	7,469	44.4
1958	1,418	8.3	1,640	9.6	1,549	9.0	1,935	11.3	4/		1,804	10.5	7,770	45.3
1959	1,371	7.9	1,536	8.8	1,604	9.2	2,196	12.6	1,743	10.0	202	1.2	8,068	46.2
1960	1,332	7.5	1,359	7.7	1,676	9.4	2,238	12.6	1,865	10.5	169	1.0	8,055	45.2
1961	1,335	7.4	1,396	7.7	1,708	9.4	2,311	12.8	1,899	10.5	123	.7	8,176	45.1
1962	1,341	7.3	1,318	7.2	1,709	9.3	2,469	13.4	2,131	11.6	24	.1	8,402	45.7
1963	1,280	6.9	1,200	6.4	1,785	9.6	2,501	13.4	2,283	12.2	127	.7	8,610	46.1
1964 5/	1,274	6.7	1,219	6.4	1,835	9.7	2,583	13.6	2,670	14.1	---	---	8,946	47.3
1965														

Year	Industrial products								All products		
	Soap 6/		Drying oil products 7/		Other industrial products 6/		All industrial products		Weight		Per capita
	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita	Including actual weight of butter and margarine	Including only fat content of butter and margarine	
	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Lb.	Mil. lb.	Mil. lb.	Lb.
Average 1935-39	1,638	12.8	774	6.0	440	3.4	2,852	22.2	9,198	8,709	67.5
1940	1,867	14.1	807	6.1	412	3.1	3,085	23.4	9,716	9,217	69.8
1941	2,275	17.3	1,066	8.1	626	4.7	3,967	30.1	10,720	10,238	77.7
1942	1,982	15.1	949	7.2	645	4.9	3,576	27.2	9,953	9,478	72.1
1943	1,844	14.3	839	6.5	781	6.1	3,462	26.9	9,262	8,871	68.8
1944	2,059	16.0	852	6.6	803	6.2	3,716	28.9	9,361	8,970	69.8
1945	1,844	14.3	807	6.3	936	7.3	3,587	27.8	9,010	8,636	66.9
1946	1,724	12.5	914	6.6	863	6.2	3,502	25.3	9,424	9,041	65.3
1947	2,234	15.7	1,007	7.1	882	6.2	4,126	28.9	10,557	10,113	70.9
1948	2,039	14.0	1,071	7.4	836	5.8	3,946	27.2	10,580	10,129	69.8
1949	1,758	11.9	964	6.5	856	5.8	3,576	24.2	10,318	9,863	66.8
1950	1,804	12.0	1,182	7.9	1,153	7.7	4,140	27.6	11,416	11,030	73.4
1951	1,505	10.0	1,129	7.5	1,217	8.1	3,850	25.5	10,679	10,216	67.6
1952	1,352	8.8	1,010	6.6	1,231	8.0	3,593	23.4	10,846	10,358	67.5
1953	1,291	8.3	1,064	6.8	1,274	8.2	3,631	23.3	11,001	10,507	67.4
1954	1,177	7.4	1,001	6.3	1,349	8.5	3,527	22.2	11,295	10,765	67.7
1955	1,115	6.9	1,104	6.8	1,621	10.0	3,840	23.7	11,829	11,287	69.5
1956	1,038	6.3	1,089	6.6	1,835	11.1	3,962	24.0	11,976	11,437	69.2
1957	994	5.9	1,015	6.0	1,950	11.6	3,959	23.5	11,980	11,428	67.9
1958	914	5.3	920	5.4	2,155	12.6	3,989	23.3	12,335	11,759	68.6
1959	862	4.9	910	5.2	2,462	14.1	4,235	24.3	12,889	12,303	70.5
1960	860	4.8	821	4.6	2,590	14.5	4,271	24.0	12,911	12,325	69.2
1961	830	4.6	846	4.7	2,546	14.1	4,223	23.3	12,994	12,399	68.4
1962	774	4.2	867	4.7	3,073	16.7	4,714	25.6	13,706	13,117	71.4
1963	775	4.2	852	4.6	3,082	16.5	4,708	25.2	13,884	13,319	71.4
1964 5/	757	4.0	856	4.5	3,174	16.8	4,787	25.3	14,334	13,733	72.5
1965											

1/ Fully processed liquid vegetable oils. Including use in mayonnaise and salad dressings, potato products, bakery products, and in fish canning, etc. Not reported separately prior to 1959. 2/ Mainly salad and cooking oils prior to 1959. Beginning with 1959 includes all food fats and oils used other than butter, lard, margarine, shortening or cooking and salad oils. 3/ Including only the fat content of butter, estimated at 80.5 percent of total weight, and of margarine for which the fat content varies slightly each year. 4/ Not available. Included in "edible oil" category. 5/ Preliminary. 6/ Fat equivalent of soap used in synthetic rubber, is included with "Other industrial products." Prior to 1949, most of the fats and oils used in synthetic detergents is believed to have been reported as used in soap. Beginning 1949, this use of fats and oils is entirely included in "Other industrial products." 7/ Paints, varnishes, floor converings, oilcloth, printing inks, core oils, synthetic resins, insulation, linings, packings, coated fabrics (other than oilcloth), caulking and other protective coatings.

Totals and per capita estimates computed from unrounded numbers.

Table 10.--Margarine (actual weight): Supply and disposition, 1935-64

Year	Supply					Disposition			
	Production			Stocks, Jan. 1	Total	Exports and shipments	Domestic disappearance		
	Colored	Uncolored	Total				Military	Civilian 1/	
								Total	Per capita
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Lb.
Average 1935-39	2	370	372	---	372	1	---	371	2.9
1940	2	318	320	---	320	1	---	318	2.4
1941	5	363	368	---	368	5	---	364	2.8
1942	65	361	426	---	426	32	---	364	2.8
1943	116	498	614	---	614	2/109	2	501	3.9
1944	108	481	588	---	588	93	1	497	3.9
1945	99	515	614	---	614	2/83	14	525	4.1
1946	58	514	573	---	573	52	5	533	3.9
1947	59	687	746	---	746	3/31	6	713	5.0
1948	96	812	908	---	908	3/16	5	887	6.1
1949	177	685	862	---	862	3/7	4	851	5.8
1950	500	437	937	13	950	3/7	11	918	6.1
1951	829	212	1,041	14	1,055	3/6	34	996	6.6
1952	1,156	130	1,286	19	1,305	3/7	54	1,219	7.9
1953	1,228	64	1,292	25	1,317	3/9	30	1,256	8.1
1954	4/	4/	1,364	22	1,386	8	5	1,346	8.5
1955	---	---	1,334	27	1,361	8	6	1,323	8.2
1956	---	---	1,370	24	1,394	9	4	1,354	8.2
1957	---	---	1,463	28	1,490	10	8	1,446	8.6
1958	---	---	1,573	26	1,599	9	3	1,549	9.0
1959	---	---	1,611	38	1,649	10	2	1,604	9.2
1960	---	---	1,695	34	1,729	10	11	1,676	9.4
1961	---	---	1,724	33	1,756	8	7	1,708	9.4
1962	---	---	1,726	33	1,759	9	2	1,709	9.3
1963	---	---	1,794	39	1,833	9	2	1,785	9.6
1964 5/	---	---	1,857	36	1,893	9	2	1,835	9.7

1/ Prior to 1950 based upon data from Bureau of Internal Revenue. 2/ Includes American Red Cross procurement for prisoner-of-war packages. 3/ Includes estimated quantities exported in food packages through CARE and other nongovernmental relief agencies; does not include quantities mailed abroad by individuals. 4/ Breakdown between colored and uncolored not available beginning with 1954. Production mainly colored since 1953. 5/ Preliminary.

Totals and per capita computed from unrounded numbers.

Table 11.--Margarine: Fats and oils used in manufacture, 1935-64

Year	Vegetable oils						Animal fats and oils			
	Soybean oil	Cotton-seed oil	Peanut oil	Corn oil	Coconut oil	Other	Lard	Beef fats	Vegetable stearine 1/	Total 2/
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Average 1935-39	32	125	3	1	105	15	2	20	---	303
1940	87	116	2	3/	22	6	5	19	3/	257
1941	76	150	2	1	30	6	8	24	---	297
1942	133	167	1	2	3	3	8	29	---	346
1943	198	252	5	6	0	4	11	24	3/	500
1944	211	215	12	11	0	3/	10	17	1	478
1945	207	254	10	9	0	3/	6	13	---	499
1946	201	223	12	7	15	---	2	5	---	465
1947	228	323	17	7	21	---	3	8	---	607
1948	255	453	11	1	5	2	3	6	---	736
1949	257	431	3/	1	3/	---	4	7	---	701
1950	312	418	7	1	---	2	4	9	11	764
1951	473	334	16	4	1	2	4	7	11	851
1952	652	354	3	3/	---	---	5	8	24	1,046
1953	726	275	2	1	7	2	8	13	12	1,049
1954	665	397	2	3/	5	1	7	10	17	1,106
1955	746	278	2	3/	6	1	13	9	16	1,075
1956	752	283	3	1	8	1	31	6	24	1,111
1957	874	237	3	3/	5	3	25	9	24	1,182
1958	1,070	145	4	1	4	2	16	8	19	1,269
1959	1,094	124	3	20	4	3	36	8	4/	1,291
1960	1,105	136	4	55	4	1	56	6	---	1,367
1961	1,062	139	3	89	3	11	72	6	---	1,386
1962	1,058	106	4	99	5	43	70	10	---	1,394
1963	1,075	104	4	136	4	58	84	11	---	1,477
1964 5/	1,146	101	10	148	5	41	48	8	---	1,507

1/ Most of the vegetable stearine used in margarine prior to 1950 was included with the primary oil. 2/ Includes 2 million pounds of secondary oils other than vegetable stearine in 1952, 3 million in 1953, 1954, 1955 and 1956, and 2 million in 1957 and 1958. 3/ Less than 500,000 pounds. 4/ Not reported separately beginning 1959. 5/ Preliminary.

Totals computed from unrounded numbers.

Table 12.--Butter, actual weight: Supply and disposition, 1935-64

Year	Supply						Disposition				
	Production			Imports	Commercial stocks Jan. 1 1/	Total supply	Exports and shipments to U. S. Territories	Domestic disappearance			
								Total	Direct use as butter		
	Creamery	Farm	Total						Military procurement	Civilian	Civilian per capita
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Lb.
Average 1935-39	1,716	479	2,195	9	64	2,268	7	2,196	---	2,196	17.0
1940	1,837	403	2,240	1	55	2,296	11	2,244	---	2,244	17.0
1941	1,872	395	2,268	4	41	2,313	13	2,185	70	2,116	16.1
1942	1,764	366	2,130	20	114	2,264	24	2,217	124	2,092	15.9
1943	1,674	342	2,015	3	25	2,043	94	1,791	266	1,525	11.8
1944	1,489	330	1,818	2	158	1,978	97	1,853	321	1,532	11.9
1945	1,364	336	1,699	4	28	1,731	55	1,635	222	1,413	10.9
1946	1,171	331	1,502	7	41	1,550	16	1,510	54	1,456	10.5
1947	1,329	311	1,640	4	23	1,667	17	1,628	28	1,600	11.2
1948	1,210	293	1,504	2/	22	1,526	8	1,486	36	1,450	10.0
1949	1,412	276	1,688	2/	32	1,720	6	1,581	32	1,549	10.5
1950	1,386	262	1,648	2/	133	1,781	28	1,648	34	1,614	10.7
1951	1,203	240	1,443	2/	105	1,548	24	1,497	52	1,445	9.6
1952	1,188	214	1,402	2/	27	1,429	2	1,354	38	1,316	8.6
1953	1,412	195	1,607	2/	73	1,680	26	1,372	43	1,329	8.5
1954	1,449	179	1,628	1	282	1,911	57	1,475	65	1,410	8.9
1955	1,383	162	1,545	1	379	1,925	224	1,537	77	1,460	9.0
1956	1,413	140	1,553	3	163	1,719	184	1,510	70	1,439	8.7
1957	1,414	119	1,533	3	25	1,561	13	1,461	55	1,406	8.4
1958	1,390	96	1,486	2	87	1,575	38	1,468	50	1,418	8.3
1959	1,334	76	1,411	2	69	1,482	29	1,422	51	1,371	7.9
1960	1,373	62	1,435	3	31	1,468	11	1,382	50	1,332	7.5
1961	1,484	52	1,536	2	77	1,615	9	1,381	46	1,335	7.4
1962	1,537	42	1,579	2	225	1,806	4/42	1,405	64	1,341	7.3
1963	1,420	33	1,453	2	5/359	1,814	4/199	1,345	64	1,280	6.9
1964 4/	1,434	27	1,461	2	5/271	1,735	4/307	1,357	82	1,274	6.7

1/ Includes stocks held by U. S. Department of Agriculture. 2/ Less than 500,000. 3/ Preliminary. 4/ Includes estimates of butter, butter oil and ghee shipped under foreign donations program not reported by Census. 5/ Includes estimates of butter oil, ghee, and canned butter.

Totals computed from unrounded numbers.

Table 13.--Lard: Supply and disposition, 1935-64

Year	Supply						Disposition					
	Production				Stocks Jan. 1 1/	Total 2/	Exports and shipments			Domestic disappearance		
											Direct use	
	Federally inspected	Other commercial	Farm	Total			Exports 3/	Shipments	Total	Total	Total	Per civilian
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Lb.
Average 1935-39	944	686		1,630	96	1,726	166	26	192	1,430	1,424	11.0
1940	1,527	761		2,288	162	2,450	201	31	232	1,924	1,901	14.4
1941	1,526	702		2,228	294	2,522	393	31	424	1,900	1,819	13.8
1942	1,724	676		2,401	199	2,600	652	33	685	1,805	1,688	12.8
1943	2,080	785		2,865	110	2,976	757	39	796	1,884	1,679	13.0
1944	2,367	279	408	3,054	297	3,351	902	36	938	1,957	1,583	12.3
1945	1,311	335	420	2,066	456	2,522	651	21	672	1,722	1,509	11.7
1946	1,342	353	439	2,134	129	2,265	451	39	490	1,664	1,640	11.8
1947	1,722	277	403	2,402	110	2,512	383	34	417	1,929	1,792	12.6
1948	1,680	252	389	2,321	167	2,488	277	50	327	1,987	1,850	12.7
1949	1,923	270	341	2,534	173	2,707	617	50	667	1,910	1,744	11.8
1950	2,009	309	313	2,631	131	2,762	467	56	523	2,112	1,891	12.6
1951	2,225	342	296	2,863	127	2,990	689	54	743	2,143	1,855	12.3
1952	2,234	378	269	2,881	104	2,992	634	60	694	2,087	1,817	11.8
1953	1,812	310	233	2,355	211	2,566	423	53	476	2,016	1,772	11.4
1954	1,831	290	209	2,330	74	2,404	465	56	521	1,779	1,627	10.2
1955	2,140	312	208	2,660	104	2,764	562	57	620	1,998	1,639	10.1
1956	2,255	304	198	2,757	147	2,904	611	60	672	2,121	1,623	9.8
1957	2,080	287	180	2,547	112	2,659	501	62	563	1,994	1,589	9.4
1958	1,982	271	173	2,426	101	2,527	389	66	455	1,977	1,640	9.6
1959	2,309	300	171	2,780	95	2,875	605	68	673	2,078	1,536	8.8
1960	2,127	292	144	2,563	124	2,687	620	61	681	1,912	1,359	7.6
1961	2,118	266	133	2,517	94	2,611	417	69	485	2,015	1,396	7.7
1962	2,104	261	115	2,480	110	2,590	422	66	488	1,974	1,318	7.2
1963	2,117	256	103	2,476	128	2,604	538	57	594	1,890	1,200	6.4
1964 4/	2,153	231	97	2,481	119	2,600	682	63	745	1,727	1,219	6.4

1/ Factory and warehouse stocks as reported by Bureau of the Census. 1948 and 1951 include stocks held or in transit by U. S. Department of Agriculture. 2/ Includes imports, which were less than 500,000 pounds in all years except 1952, when 7 million pounds were imported. 3/ 1947-53, include shipments by CARE. 4/ Preliminary

Totals computed from unrounded numbers.

Table 14.--Shortening: Supply and disposition, 1935-64 1/

Year	Supply				Disposition			
						Domestic disappearance		
							Civilian	
	Production	Imports	Stocks, Jan. 1	Total supply	Exports and shipments	Military excluding relief	Total	Per capita
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Lb.
Average 1935-39	1,529	4	43	1,576	8	---	1,519	11.8
1940	1,190	1	57	1,247	9	---	1,185	9.0
1941	1,409	1	54	1,465	12	32	1,367	10.4
1942	1,300	2/	53	1,354	15	57	1,237	9.4
1943	1,438	2/	46	1,483	81	102	1,234	9.6
1944	1,363	2/	67	1,431	19	212	1,147	8.9
1945	1,441	2/	53	1,494	52	223	1,175	9.1
1946	1,450	2/	44	1,494	26	18	1,409	10.2
1947	1,374	2/	41	1,416	29	-5	1,338	9.4
1948	1,441	2/	53	1,494	8	8	1,410	9.7
1949	1,487	2/	67	1,554	26	12	1,435	9.7
1950	1,710	2/	82	1,792	13	20	1,656	11.0
1951	1,403	2/	104	1,507	13	28	1,365	9.0
1952	1,611	2/	101	1,713	10	47	1,562	10.2
1953	1,675	---	94	1,768	16	62	1,597	10.2
1954	1,961	---	94	2,055	17	45	1,870	11.8
1955	1,975	---	120	2,095	42	47	1,863	11.5
1956	1,842	---	143	1,985	12	54	1,797	10.9
1957	1,808	---	122	1,930	17	37	1,756	10.4
1958	2,006	---	120	2,126	33	30	1,935	11.3
1959	2,252	---	127	2,380	36	32	2,196	12.6
1960	2,313	---	115	2,428	31	39	2,238	12.6
1961	2,456	---	120	2,576	3/92	51	2,311	12.8
1962	2,689	---	123	2,812	3/139	39	2,469	13.4
1963	2,561	---	165	2,726	3/66	39	2,501	13.4
1964 4/	2,649		119	2,768	21	43	2,583	13.6

1/ Totals and per capita computed from unrounded numbers. Various adjustments have been made in exports, military and civilian use in 1941-49 primarily because of government programs. 2/ Less than 500,000 pounds. 3/ Includes estimates of foreign donations, not reported by Census. 4/ Preliminary.

Table 15.--Shortening: Fats and oils used in manufacture, 1935-64

Year	Vegetable oils							Animal fats and oils		Total primary fats and oils	Vegetable stearine	Glycerides	Total primary and secondary fats and oils
	Cottonseed oil	Soybean oil	Coconut oil	Peanut oil	Corn oil	Other 1/	Total	Lard	Beef fats				
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Average 1935-39	1,014	119	28	68	1	195	1,425	4	117	1,546	---		1,546
1940	823	212	18	23	1	44	1,121	17	58	1,196	---		1,196
1941	889	216	22	82	2/	93	1,302	51	65	1,418	---		1,418
1942	694	336	5	38	4	58	1,135	62	88	1,285	3/24		1,309
1943	572	568	2/	51	6	4/25	1,222	36	112	1,370	88		1,458
1944	490	620	2/	61	5	10	1,186	39	85	1,310	78		1,388
1945	487	683	2/	51	2	23	1,246	23	106	1,375	81		1,456
1946	502	744	18	42	3	10	1,319	20	58	1,397	69		1,466
1947	300	705	87	65	3	1	1,161	101	64	1,326	70		1,396
1948	321	708	48	56	4	6	1,143	114	45	1,300	101		1,403
1949	532	713	20	12	1	3	1,281	118	31	1,430	64		1,494
1950	549	841	0	12	1	27	1,430	177	31	1,638	89		1,727
1951	335	731	20	21	1	25	1,133	200	23	1,356	48		1,405
1952	388	851	33	6	1	2	1,281	232	34	1,547	66		1,613
1953	376	903	2	4	1	4	1,290	227	46	1,563	82	35	1,681
1954	640	918	15	5	1	20	1,599	142	89	1,830	99	39	1,969
1955	439	930	4	6	3	15	1,397	334	118	1,849	99	40	1,988
1956	323	782	6	6	2	8	1,127	459	141	1,727	90	38	1,855
1957	272	796	8	6	4	3	1,089	376	226	1,691	95	37	1,824
1958	239	1,055	12	5	3	2	1,316	318	252	1,886	86	39	2,011
1959	320	1,143	20	1	5	5	1,494	493	257	2,244	5/	5/	2,244
1960	365	1,169	10	2	4	3	1,553	480	268	2,302	5/	5/	2,302
1961	356	1,160	26	3	14	22	1,581	530	348	2,459	5/	5/	2,459
1962	367	1,362	27	1	7	23	1,787	571	338	2,696	5/	5/	2,696
1963	330	1,228	19	3	3	22	1,577	587	372	2,564	5/	5/	2,564
1964 6/	378	1,373	18	5	8	20	1,803	446	404	2,654	5/	5/	2,654

1/ Includes fish oils which have been negligible in recent years. 2/ Less than 500,000 pounds. 3/ October-December quarter only. 4/ Includes 7 million pounds of linseed oil. 5/ Not reported separately beginning 1959. 6/ Preliminary.

TRENDS IN U. S. SOYBEAN ACREAGE AND PRODUCTION, 1947-65

by
George W. Kromer

Soybean acreage planted for all purposes in the United States rose sharply in the postwar era from around 12 million acres in 1947-49 to about 32 million in 1964. A record 34 million acres is indicated for 1965, based on March 1 planting intentions (table 16). Soybean production during this period increased from around 216 million bushels in 1947-49 to nearly 700 million in 1964 (table 17). If farmers plant the intended acreage, and if yields are average with an allowance for trend, the 1965 soybean crop will reach a record 829 million bushels.

One of the most challenging problems facing researchers and the industry is how to raise soybean yields from the plateau on which they have remained for the past 8 years. The importance of this problem was stressed in a recent industry research advisory report to the USDA which included the following statement:

"While soybeans have been produced in the United States for over 40 years, the national yields have never exceeded 25 bushels per acre. In fact, during the past decade yields have only increased 18% compared to corn increases of 58%, cotton 60%, and grain sorghum 119%. Yet the demand for soybeans has been increasing at a rapid rate, and it is expected to increase another 50% during the next 5 years. To meet increased production requirements, growers have been expanding their soybean acreage. However, there is a limit in additional land that can be used for producing soybeans and unless there is some breakthrough in the existing yield barrier, it is doubtful if the anticipated increased domestic and foreign demand for soybeans and soybean products can be met. The yield barrier is also hampering farmers' efforts to cut production costs." 1/

Soybeans Rank Third Among U. S. Cash Crops In 1964

World War II was the principal force that sparked the expansion in soybeans and raised this oilseed to its present important status in American agriculture. Before World War II, the United States was a net importer of oilseeds, fats, and oils for both food and nonfood uses and for livestock feeds. The hostilities cut off many Far Eastern supplies while rising U. S. incomes increased the demand for meat and other livestock products. This resulted in a greater demand for protein supplies to feed the expanding livestock numbers. Development of the mixed feed industry further boosted feed demand. The demand for all fats and oils was strengthened because of the need to replace lost imports, the greater use of shortening, and the increased use of margarine as a replacement

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1/ Report and recommendations submitted to the Secretary of Agriculture by the Oilseed, Peanut and, Sugar Crops Research Advisory Committee, which met in New Orleans, La., January 18-21, 1965. Copies of this report may be obtained from the Executive Secretary of the Oilseed, Peanut, and Sugar Crops Research Advisory Committee, Research Program Development and Evaluation Staff, U. S. Department of Agriculture, Washington, D. C. 20250.

Table 16.--Soybeans: Acreage, yield and production, U. S., 1947-65

Year	Acres planted: Grown alone	Acres planted: Interplanted 1/	Acres planted: Equivalent solid 2/	Acres harvested: For beans	Acres harvested: For hay	Grazed or plowed under	Yield per acre harvested: For beans	Yield per acre harvested: For hay	Production: Beans	Production: Hay
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	Bushels	Tons	1,000 bushels	1,000 tons
1947	13,052	1,408	13,755	11,411	1,292	1,052	16.3	1.22	186,451	1,574
1948	11,987	1,259	12,617	10,682	1,111	824	21.3	1.30	227,217	1,446
1949	11,872	1,165	12,456	10,482	1,130	844	22.3	1.32	234,194	1,488
1950	15,048	1,184	15,640	13,807	963	870	21.7	1.31	299,249	1,260
1951	15,176	955	15,655	13,615	893	1,147	20.8	1.24	283,777	1,110
1952	15,958	831	16,374	14,435	1,085	854	20.7	1.10	298,839	1,191
1953	16,394	653	16,719	14,829	1,037	853	18.2	1.09	269,169	1,134
1954	18,541	663	18,872	17,047	876	949	20.0	1.04	341,075	913
1955	19,674	617	19,981	18,620	705	656	20.1	1.28	373,682	904
1956	21,700	597	21,998	20,620	524	354	21.8	1.29	449,251	675
1957	21,938	497	22,186	20,857	444	885	23.2	1.29	483,425	574
1958	25,108	484	25,350	23,993	472	885	24.2	1.43	580,250	674
1959	23,349	459	23,579	22,631	351	597	23.5	1.41	532,899	496
1960	24,449	398	24,649	23,655	449	545	23.5	1.44	555,307	646
1961	27,815	332	27,981	27,008	424	549	25.2	1.47	679,566	624
1962	28,448	290	28,593	27,604	475	514	24.2	1.37	669,211	514
1963	29,459	278	29,598	28,580	547	471	24.5	1.38	699,363	757
1964	31,677	234	31,794	30,738	531	525	22.8	1.39	699,882	738
1965 3/	34,266									

1/ Grown with other crops.
2/ Acreage grown alone, plus one half the interplanted acres.
3/ March 1 planting intentions.

Table 17--Soybeans: Supply, disposition, and price, 1947-64

Year beginning October	Supply: Production	Supply: Stocks, Oct. 1 1/: On farms	Supply: Stocks, Oct. 1 1/: Off farms	Supply: Stocks, Oct. 1 1/: Total	Supply: Total supply	Disposition: Exports	Disposition: Crushings 2/	Disposition: Used for seed: Total	Disposition: Used for seed: Per acre planted	Disposition: Feed 3/	Disposition: Residual 4/	Price per bushel: Season average received by farmers 5/	Price per bushel: Support	Production of: Oil: Total	Production of: Oil: Per bushel crushed 6/	Production of: Meal: Total	Production of: Meal: Per bushel crushed 6/
	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Mil. bu.	Lb.	Mil. bu.	Mil. bu.	Dol.	Dol.	Mil. lb.	Lb.	1,000 tons	Lb.
1947	186.5	2.3	3.1	5.4	191.8	7/2.9	161.4	16.1	76	2.5	6.3	3.33	2.04	1,534	9.5	3,833	47.5
1948	227.2	1.9	.7	2.6	229.8	23.0	183.7	15.9	76	2.8	1.2	2.27	2.18	1,807	9.8	4,330	47.1
1949	234.2	2.2	1.0	3.2	237.4	13.1	195.3	18.9	77	2.5	4.7	2.16	2.11	1,937	9.9	4,586	47.0
1950	299.2	1.2	1.7	2.9	302.1	27.8	252.0	19.0	72	2.3	-3.2	2.47	2.06	2,454	9.7	5,897	46.8
1951	283.8	2.7	1.5	4.2	287.9	17.0	244.4	19.8	73	2.0	1.1	2.73	2.45	2,444	10.0	5,704	46.7
1952	298.8	2.0	1.6	3.6	302.4	31.9	234.4	20.7	72	1.8	3.5	2.72	2.56	2,536	10.8	5,551	47.4
1953	269.2	5.8	4.4	10.1	279.3	39.7	213.2	22.9	74	1.4	.8	2.72	2.56	2.350	11.0	5,051	47.4
1954	341.1	.5	.8	1.3	342.4	60.6	249.0	23.4	73	1.6	-2.1	2.46	2.22	2,711	10.9	5,705	45.8
1955	373.7	3.9	6.0	9.9	383.6	67.5	283.1	25.8	70	1.6	1.9	2.22	2.04	3,143	11.1	6,546	46.2
1956	449.3	2.0	1.7	3.7	453.0	85.4	316.0	26.4	71	1.7	13.7	2.18	2.15	3,431	10.9	7,510	47.5
1957	483.4	3.6	6.3	9.9	493.3	85.5	353.8	29.5	71	1.5	1.9	2.07	2.09	3,800	10.7	8,284	46.8
1958	580.2	2.2	18.9	21.1	601.3	110.1	401.2	27.4	70	1.9	-1.4	2.00	2.09	4,251	10.6	9,490	47.3
1959	532.9	17.1	45.0	62.1	595.0	141.4	393.4	29.3	70	1.5	6.2	1.96	1.85	4,338	11.0	9,152	46.5
1960	555.3	3.4	19.8	23.2	578.5	130.1	402.2	32.8	71	1.3	6.1	2.13	1.85	4,420	11.0	9,452	47.0
1961	679.6	1.6	4.4	6.0	685.6	153.2	438.8	33.5	70	1.1	1.4	2.28	2.30	4,790	10.9	10,342	47.1
1962	669.2	13.8	43.8	57.6	726.8	180.3	474.5	34.4	70	1.2	21.2	2.34	2.25	5,091	10.7	11,127	46.9
1963	699.4	4.0	11.1	15.1	714.4	191.1	440.9	37.3	70	1.2	12.0	2.51	2.25	4,822	10.9	10,609	48.1
1964 8/	699.9	15.2	16.8	32.0	731.8	205	470					2.65	2.25	5,100	10.8	11,200	47.7
1965 9/	829			10	839								2.25				

1/ Data include stocks on farms, at processing plants, commercial stocks at terminals, CCC stocks in transit to ports, and stocks in interior mills, elevators, and warehouses.
2/ Crushings as reported by Bureau of the Census. Some new-crop soybeans are crushed prior to October 1. These affect the size of the residual item.
3/ Fed to livestock on farms where grown.
4/ Includes cleaning and other losses, year-to-year changes in volume of soybeans crushed prior to October 1, and other statistical discrepancies.
5/ Season average price in each State for the marketing year weighted by quantities sold. Includes an allowance for unredeemed loans 1948 to date.
6/ Computed from unrounded data.
7/ Includes exports for civilian feeding abroad by the military forces.
8/ Preliminary and partly estimated.
9/ Forecast. Production estimate based on March 1 planting intentions and 1959-63 average yield per acre with an allowance for trend.

for butter. These heavy wartime demands, together with higher Government price supports, brought about increased soybean acreage and production during this period.

Soybeans have moved from obscurity in the prewar era to third place currently (1964) among cash crops in this country, outranked in value only by corn and cotton. The value of the U. S. soybean crop jumped from $0.5 billion during 1947-49 to $1.8 billion in 1964. The crop value of soybeans in 1964 surpassed that of wheat for the first time. This does not include the wheat certificate payments authorized under the 1964 wheat program. During the past 2 marketing years, exports of soybeans (including soybean oil and meal) returned more dollars to the United States than any other single agricultural commodity.

Many Factors Contribute to Uptrend in Soybean Acreage

During the postwar period, over 20 million acres have been shifted from other crops (mainly oats, corn, and cotton) to soybeans. The Corn Belt historically has been the main production area for soybeans and is likely to continue so. However, rapid acreage increases during the past 10 to 15 years in the Delta States, Lake States, and Atlantic States have reduced the relative importance of the Corn Belt. 1/

Many developments have contributed to the sharp uptrend in soybean acreage and production. No attempt is made here to rank them since all have contributed in some way. However, one of several developments that stand out predominately is the rapid expansion in market outlets for soybeans, oil, and protein meal, both at home and abroad. Because of soybeans, the United States has emerged as the leading world supplier and trader in oilseeds, oils and fats, currently accounting for 28 percent of world output and 37 percent of world exports. The United States accounts for about two-thirds of the world's soybean production and Mainland China almost one-third. Exports of U. S. soybeans and soybean oil in recent years have represented close to 95 percent of the total world exports of these commodities.

Another factor has been the favorable prices received by soybean growers. Soybeans have never been in surplus supply and in most years, market prices have averaged well above the support level.

New varieties of soybeans, better suited to both new and old production areas, have resulted in some long run increase in yields, and broadened the production area within which competitive returns could be obtained.

Another major factor has been the rapid increase in mechanization (for planting, cultivating, and harvesting) and the downward trend in horse and mule

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1/ Totals or averages for selected groups of States in each region are used for analytical purposes. These States represent the bulk of soybean production in the respective regions. The groups of States are as follows: North Central or Corn Belt--Illinois, Iowa, Indiana, Ohio, and Missouri; Lake States--Minnesota Wisconsin and Michigan; Plains States--Kansas, Nebraska, South Dakota, and North Dakota; Delta States--Arkansas, Mississippi, and Louisiana; Atlantic States--North Carolina, South Carolina, Virginia, Maryland, and Delaware.

numbers which reduced the requirements of grain feed for work stock. Farmers turned to soybeans when an alternate crop was needed to boost their incomes above the dwindling market for oats. Those who were equipped to handle small grains and row crops were able to shift readily to soybeans without additional investment in farm equipment.

Rapid Expansion in Soybean Acreage Occurs During 1960's

Soybean acreage planted for all purposes jumped from 12 million acres in 1949 to 15 million in 1950. Acreage increases then slowed somewhat each year thereafter, reaching 25 million acres in 1958. Plantings then dropped to the 23 to 24 million-acre level during 1959 and 1960. Cotton acreage expanded during these 2 years, due to the A and B Program (table 18). Corn allotments were removed in 1959.

The sharpest increase in soybean acreage has occurred in recent years, rising from about 24 million acres planted in 1960 to the record 34 million indicated for 1965. The average rate of increase during 1960-65 has been about 2 million acres per year compared with an annual rate of 1 million during the 1950's. Corn acreage has dropped sharply during the 1960's. It declined from 82 million in 1960 to 67 million in 1964 (table 18). Under the special feed grain program enacted in March 1961, farmers have diverted from 17 to 22 million acres of corn annually to soil-conserving uses during the past 4 years. During the 4 years, cotton acreage declined slightly under Government programs. As may be seen in table 18, the 8.4-million-acre increase in soybeans during 1959-64 has been offset by a comparable decline in oat acreage planted for grain.

For the country as a whole, only soybeans of the 6 crops shown in table 19 registered a gain in harvested acreage during 1949-64, gaining 192 percent during the period. Acreages of the other crops decreased--cotton 49 percent, oats 46 percent, wheat 35 percent, corn 33 percent, and hay 7 percent. Soybeans have never had acreage controls or planting restrictions.

Corn Belt Accounts for 55 Percent of Soybean Acreage Compared With 70 Percent During 1947-49

Since the end of World War II, the Corn Belt States have continued to be the major production area for soybeans but rapid increases in acreage in other sections of the United States have reduced the relative importance of the Corn Belt. The proportion of U. S. soybean acreage situated in the Corn Belt declined steadily from about 70 percent of the U. S. total during 1947-49 to 55 percent in 1965. This change occurred even while total acreage in these States continued rising from 9 million to 19 million. The annual rate of decline has slowed considerably since 1958 (table 20). The Delta, Lake, and Atlantic States are the other areas that showed significant increases in soybean acreage and production in the postwar years, especially since the mid-1950's (See cover chart).

The greatest expansion in soybean acreage outside the Corn Belt has occurred in the Delta States. Plantings during 1947-49 were relatively stable

Table 18.--U. S. planted acreage, Soil Bank acreage, and diverted acreage for selected crops, 1955-65

Year	Soybeans		Oats		Corn			
	U. S. planted	In Soil Bank Conservation Reserve 1/	U. S. planted	In Soil Bank Conservation Reserve 1/	U. S. planted	In Soil Bank Conservation Reserve 1/	In Soil Bank Acreage Reserve 2/	Diverted under Feed Grain Program 3/
	Mil. acre	Mil. acre	Mil. acre	Mil. acre	Mil. acre	Mil. acre	Mil. acre	Mil. acre
1955	19.7	---	47.5	---	80.9	---	---	---
1956	21.7	4/	44.2	4/	77.8	4/	5.3	---
1957	21.9	0.2	41.8	1.1	73.2	0.9	5.2	---
1958	25.1	0.3	37.7	1.8	73.4	1.5	6.7	---
1959	23.3	0.9	35.1	3.2	82.7	3.5	---	---
1960	24.4	1.1	31.5	4.0	81.7	4.6	---	---
1961	27.8	1.1	32.5	3.9	66.8	4.6	---	19.1
1962	28.4	1.0	29.9	3.6	65.9	4.3	---	20.3
1963	29.5	0.9	28.7	3.3	70.0	4.0	---	17.2
1964	31.7	0.6	26.6	2.4	67.4	2.8	---	22.2
1965 5/	34.3		25.1		66.9			
Change from:								
1955 to 1964	+12.0		-20.9		-13.5			
1959 to 1964	+ 8.4		- 8.5		-15.3			

Year	Wheat (all)				Cotton		
	U. S. planted	In Soil Bank Conservation Reserve 1/	In Soil Bank Acreage Reserve 2/	Diverted under Wheat Program	U. S. planted	In Soil Bank Conservation Reserve	In Soil Bank Acreage Reserve 2/
1955	58.2	---	---	---	18.0	---	---
1956	60.7	4/	5.7	---	17.1	4/	1.1
1957	49.8	0.5	12.8	---	14.3	0.1	3.0
1958	56.0	0.8	5.3	---	12.4	0.2	4.9
1959	56.8	2.3	---	---	15.8	0.5	---
1960	54.9	3.2	---	---	16.1		
1961	55.7	3.2	---	---	16.6	0.7	---
1962	49.1	2.9	---	10.7	16.3	0.6	---
1963	53.0	2.7	---	7.2	14.8	0.6	---
1964	55.0	2.1	---	5.1	14.8	0.5	---
1965 5/	56.9				14.3		
Change from:							
1955 to 1964	-3.2				-3.2		
1959 to 1964	-1.8				-1.0		

1/ A long range program for adjusting production and increasing the conservation of soil, water, wildlife, and forest resources. The farmer receives 2 payments--practice payment for conservation and payment for land taken out of production. Data are ASCS estimates based on pre-contract history. 2/ Corn, wheat, cotton, rice, most kinds of tobacco, and peanut farmers received yearly payments for reducing their harvested acreage below allotments. The program began with the 1956 crop year and continued through 1958. 3/ A special Feed Grain Program, enacted in 1961, permitted farmers to reduce their corn and sorghum acreage at least 20 percent in return for acreage diversion payments and eligibility for price support. A similar program was in effect during 1962-1964 with barley added. 4/ Data are not available. 5/ March 1 planting intentions.

Table 19.--Soybeans and other selected crops: Harvested acreages and their changes, Corn Belt, South, and U. S., selected years, 1949-1964

Crop and area	1949	Change in acreage from 1949 through					Percentage change 1949-64
		1950 1/	1953 2/	1957 3/	1960 4/	1964 5/	
	Million acres	Million acres	Million acres	Million acres	Million acres	Million acres	Percent
Corn Belt 6/							
Corn	33.2	-3.4	-0.4	-3.8	+1.6	-3.6	-11
Hay	13.0	+1.7	+ .8	- .1	-1.2	-1.5	-12
Oats	14.1	.0	-1.9	-3.2	-5.8	-9.3	-66
Soybeans	7.8	+2.0	+2.4	+5.2	+6.0	+9.6	+123
Wheat	8.1	-1.4	- .2	-1.8	-2.4	-2.0	-25
Total	76.2	-1.7	+ .7	-3.7	-1.8	-6.8	- 9
South 7/							
Corn	16.9	+1.2	-3.0	-5.1	-7.6	-10.1	-60
Cotton	23.3	-8.2	-3.5	-12.1	-10.9	-11.8	-51
Hay	10.4	- .6	- .4	-1.9	-2.6	- 1.8	-17
Oats	3.3	+ .1	+ .7	+1.1	- .8	- 1.5	-45
Soybeans	1.0	+ .6	+ .8	+2.3	+4.3	+ 6.0	+600
Wheat	14.0	-6.1	-4.2	-7.0	-4.9	- 5.5	-39
Total	68.9	-13.0	-9.6	-22.7	-22.5	-24.7	-36
United States							
Corn	85.6	-3.8	-5.1	-13.7	-14.0	-28.5	-33
Cotton	27.4	-9.6	-3.1	-13.8	-12.1	-13.3	-49
Hay, all	72.8	+2.3	+2.2	- .9	- 5.6	- 4.9	- 7
Oats	37.8	+1.5	- .3	- 3.7	-11.2	-17.4	-46
Soybeans	10.5	+3.3	+4.3	+10.9	+13.7	+20.2	+192
Wheat	75.9	-14.3	-8.1	-32.1	-24.0	-26.7	-35
Total	310.0	-20.6	-10.1	-53.3	-43.2	-70.6	-23

1/ Acreage restrictions on corn, cotton, and wheat. 2/ No acreage controls. 3/ Acreage restrictions on corn, cotton, and wheat. Soil Bank Program in effect. 4/ Acreage controls on cotton and wheat but not corn. Soil Bank Program in effect. 5/ Voluntary feed grain and wheat programs. Feed grain farmers were required to divert at least 20 percent of base acreage to qualify for price supports and acreage diversion payments. 6/ Illinois, Iowa, Indiana, Ohio and Missouri. 7/ Southeastern States plus Mississippi, Tennessee, Louisiana, Arkansas, Texas, and Oklahoma.

Table 20.--Soybeans: Acreage planted for all purposes, by selected groups of States, 1947-65

Year	United States		Corn Belt States 1/		Lake States 2/		Plains States 3/		Delta States 4/		Atlantic States 5/		All other States 6/	
	1,000 acres	Pct.	1,000 acres	Pct.	1,000 acres	Pct.	1,000 acres	Pct.	1,000 acres	Pct.	1,000 acres	Pct.	1,000 acres	Pct.
1947	13,052	100	9,302	71	1,187	9	348	3	749	6	728	5	738	6
1948	11,987	100	8,441	70	1,044	9	266	2	739	6	748	6	749	7
1949	11,872	100	8,294	70	931	8	346	3	729	6	767	6	805	7
1950	15,048	100	10,194	68	1,351	9	575	4	1,214	8	872	6	842	5
1951	15,176	100	9,834	65	1,326	9	649	4	1,372	9	938	6	1,057	7
1952	15,958	100	9,938	62	1,358	9	913	5	1,680	11	947	6	1,122	7
1953	16,394	100	10,656	65	1,583	10	819	5	1,435	9	976	6	925	5
1954	18,541	100	11,528	62	2,221	12	840	5	1,845	10	1,117	6	990	5
1955	19,674	100	11,934	61	2,521	13	909	4	2,141	11	1,175	6	994	5
1956	21,700	100	12,645	58	3,006	14	994	4	2,624	12	1,445	7	986	5
1957	21,938	100	13,285	61	3,065	14	768	4	2,366	10	1,498	7	956	4
1958	25,108	100	14,347	57	3,563	14	1,177	5	3,272	13	1,618	6	1,131	5
1959	23,349	100	13,326	57	2,596	11	950	4	3,643	16	1,634	7	1,200	5
1960	24,449	100	13,987	57	2,449	10	1,043	4	3,681	15	1,957	8	1,332	6
1961	27,815	100	16,138	58	2,760	10	1,345	5	3,927	14	2,205	8	1,440	5
1962	28,448	100	16,357	57	2,697	9	1,448	5	4,172	15	2,285	8	1,489	6
1963	29,459	100	16,436	56	2,851	10	1,532	5	4,675	16	2,362	8	1,603	5
1964	31,677	100	17,692	56	3,363	11	1,671	5	4,839	15	2,440	8	1,669	5
1965 7/	34,266	100	18,862	55	3,802	11	1,990	6	5,221	15	2,608	8	1,783	5

1/ Illinois, Iowa, Indiana, Ohio, and Missouri. 2/ Minnesota, Wisconsin, and Michigan. 3/ Kansas, Nebraska, South Dakota, and North Dakota. 4/ Arkansas, Mississippi, and Louisiana. 5/ North Carolina, South Carolina, Virginia, Maryland, and Delaware. 6/ Includes New York, New Jersey, Pennsylvania, West Virginia, Georgia, Florida, Kentucky, Tennessee, Alabama, Oklahoma, and Texas. 7/ March 1 planting intentions.

at about 0.7 million acres, comprising 6 percent of the total U. S. acreage. The acreage then jumped to 1.2 million in 1950 and has generally trended upward thereafter to 5.2 million in 1965 or 15 percent of the total acreage indicated for 1965.

Soybean plantings in the Lake States during 1947-49 were generally stable at around a million acres, accounting for 8 to 9 percent of total U. S. acreage. Acreage increased to 1.3 million in 1950 and trended upward to a peak of 3.6 million in 1958--14 percent of the total. Since then, acreage has been somewhat less, but March 1 intentions indicates that 3.8 million acres will be planted in the Lake States in 1965.

Acres planted to soybeans in the Atlantic States has also shown a steady uptrend, rising from 0.7 million acres in 1947-49 to a record 2.6 million indicated for 1965 or 8 percent of the U. S. total. Acreage in the Plains States has displayed a similar but smaller uptrend.

Soybean Yields Per Acre On A Plateau

Soybean yields per acre harvested for beans generally trended upward from 16.3 bushels in 1947 to a record 25.2 bushels in 1961 (table 21). The principal influences in the postwar uptrend appear to have been improved varieties and more efficient machinery in harvesting. Other factors were better management of soils, more timely operations, and other improved practices--including other phases of mechanization than harvesting alone.

Since 1957, soybean yields have remained on a plateau, the U. S. average varying between 23.2 bushels per acre that year and the 1961 peak of 25.2 bushels. (See chart, page 35). Drought reduced the 1964 crop yield to 22.8 bushels per acre. The leveling off of yields in recent years partly reflects (1) the rapid expansion of soybeans into new areas for which available varieties were not so well suited, and (2) planting of soybeans by many farmers lacking experience with the crop. In some areas of the country, too, soybeans are considered as a secondary crop behind others such as corn, cotton, rice, peanuts, and wheat. For this reason, soybeans do not always get the necessary attention, especially when it comes to the availability of machinery and time. In some parts of the South, soybean plantings follow small grains. If soybeans were the primary crop, yields probably could be raised by a more timely planting schedule and more attention.

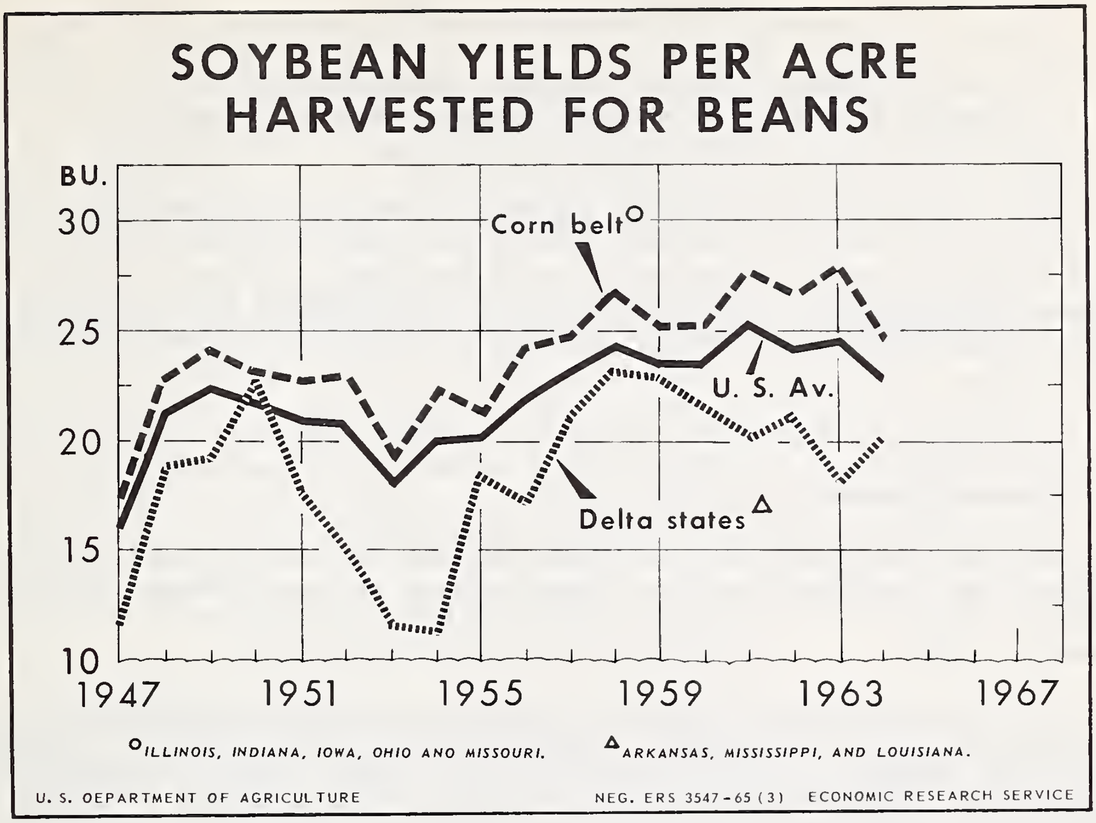
As shown in table 21, yields of soybeans per acre are considerably higher in the Corn Belt than in other areas of the United States. However, in each of the 5 major groups of States shown, the plateau pattern of yields has been evident in recent years.

Research the Key to Breaking Yield Barrier

Long-range projections show that the demand for soybeans, soybean oil, and soybean meal will continue to increase, both domestically and abroad, requiring an annual soybean supply of a billion bushels in the early 1970's. U. S.

Table 21.--Soybeans: U. S. acreage, yield, and production, by selected groups of States, 1947-64

Year	United States	Corn Belt States	Lake States	Plains States	Delta States	Atlantic States	All other States
	Acreage Harvested For Beans						
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres	1,000 acres
1947	11,411	8,798	1,065	318	428	463	339
1948	10,682	8,080	983	237	480	525	377
1949	10,482	7,834	851	328	499	550	420
1950	13,807	9,870	1,260	558	979	654	486
1951	13,615	9,434	1,245	547	1,080	713	596
1952	14,435	9,589	1,294	842	1,391	714	605
1953	14,829	10,241	1,517	699	1,071	748	553
1954	17,047	11,160	2,174	698	1,550	866	599
1955	18,620	11,721	2,469	846	1,931	977	676
1956	20,620	12,413	2,918	902	2,396	1,301	690
1957	20,857	13,038	2,896	717	2,191	1,331	685
1958	23,993	13,990	3,488	1,142	3,079	1,440	854
1959	22,631	13,180	2,554	924	3,505	1,479	989
1960	23,655	13,830	2,407	1,026	3,541	1,778	1,073
1961	27,008	15,930	2,735	1,305	3,795	2,022	1,221
1962	27,604	16,211	2,653	1,412	4,008	2,084	1,236
1963	28,580	16,290	2,816	1,488	4,536	2,118	1,332
1964	30,738	17,450	3,320	1,630	4,695	2,201	1,442
	Yields Per Acre Harvested For Beans						
	Bushels	Bushels	Bushels	Bushels	Bushels	Bushels	Bushels
1947	16.3	17.0	15.1	9.6	11.6	14.3	16.0
1948	21.3	22.6	17.9	16.1	18.9	14.0	18.9
1949	22.3	24.0	17.8	14.6	19.1	15.8	18.4
1950	21.7	23.1	15.9	17.3	22.6	16.2	18.8
1951	20.8	22.6	17.7	15.2	17.2	16.3	17.0
1952	20.7	23.0	18.9	13.4	15.1	16.3	16.8
1953	18.2	19.4	20.2	10.4	11.5	15.4	15.2
1954	20.0	22.1	21.3	14.1	11.3	14.9	13.5
1955	20.1	21.4	19.4	11.1	18.5	17.7	17.9
1956	21.8	24.3	19.9	10.7	17.2	20.1	18.3
1957	23.2	24.9	21.4	17.3	21.2	18.7	19.9
1958	24.2	26.8	17.8	19.1	23.3	21.4	22.5
1959	23.5	25.3	19.5	18.1	22.9	20.7	22.3
1960	23.5	25.2	19.4	20.6	21.4	22.3	22.4
1961	25.2	27.6	23.1	21.0	20.2	22.0	22.6
1962	24.2	26.8	19.8	19.7	21.0	20.8	21.7
1963	24.5	27.8	23.8	19.3	18.2	18.6	21.0
1964	22.8	24.7	20.0	18.5	20.0	21.5	22.0
	Production From Harvested Acres For Beans						
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
1947	186,451	149,931	16,040	3,054	5,392	6,606	5,428
1948	227,217	182,298	17,552	3,818	9,054	7,372	7,123
1949	234,194	188,215	15,186	4,803	9,549	8,708	7,733
1950	299,249	227,698	20,027	9,651	22,162	10,589	9,122
1951	283,777	213,133	22,021	8,324	18,529	11,643	10,127
1952	298,839	220,221	24,445	11,285	21,068	11,628	10,192
1953	269,169	199,041	30,589	7,305	12,331	11,510	8,393
1954	341,075	246,570	46,237	9,871	17,448	12,865	8,084
1955	373,682	251,080	47,945	9,398	35,890	17,278	12,091
1956	449,251	301,548	58,184	9,643	41,124	26,106	12,646
1957	483,425	324,149	61,933	12,372	46,410	24,904	13,657
1958	580,250	374,651	62,185	21,798	71,676	30,749	19,191
1959	532,899	333,381	49,871	16,746	80,230	30,652	22,019
1960	555,307	347,899	46,711	21,179	75,925	39,578	24,015
1961	679,566	440,094	63,269	27,400	76,744	44,523	27,536
1962	669,211	434,595	52,636	27,749	84,067	43,389	26,775
1963	699,363	453,554	67,074	28,655	82,687	39,481	27,912
1964	699,882	430,433	66,524	30,197	93,676	47,380	31,672


SOYBEAN YIELDS PER ACRE HARVESTED FOR BEANS

°ILLINOIS, INDIANA, IOWA, OHIO AND MISSOURI. △ARKANSAS, MISSISSIPPI, AND LOUISIANA.

U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 3547-65 (3) ECONOMIC RESEARCH SERVICE

production of soybeans is expected to increase also, but higher yields per acre will be needed. In recent years there has been a limit on additional land that could be used for soybeans. Higher yields will also help to reduce production costs and enable soybeans to compete more effectively for idle land and land in other crops.

A combination of both applied and basic research is needed on all phases of soybean production in order to break the so-called yield barrier. The USDA is expanding its basic farm research program for soybeans in such areas as culture, breeding, diseases, variety evaluation, pest control, weed control, and nematode control. The answer to low yields and other production problems is believed to lie in these broad fields.

One crop researcher states: "It will be uphill work to raise soybean yields from the plateau on which they have remained so long. One brillant breakthrough (or) one fundamental discovery might furnish a tremendous push. However, it's more likely that a combination of many small advances, made through the research of an augmented group of competent scientists, will make soybean acres produce more." 1/

1/ A talk by Dr. Marion W. Parker, Director, Crops Research Division, Agricultural Research Service, USDA, before the American Soybean Associations' 44th Convention, Kansas City, Mo., August 1964.

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COOKED SOYBEANS FOR FEED

By Harry O. Doty, Jr., Agricultural Economist
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Cooked whole soybeans, a feed ingredient useable in making mixed feeds, has recently been developed through research and practical experience of private industry, several State Agricultural Experiment Stations, and the U. S. Department of Agriculture. This product is also identified as heat-processed soybeans; toasted soybeans; cooked, full-fat soybeans; and cooked, unextracted soybean meal.

Information in this report is based on market research on the relative costs and feasibility of using soybeans in this way and on fat-in-feed usage among livestock producers. 1/ 2/

Many farmers in the late 1930's and during World War II used raw soybeans as a grain-type feed for livestock. Small amounts of raw soybeans are still fed although their use in raw form is not nutritionally desirable, according to research studies.

Use of whole, cooked soybeans for livestock feeds could be advantageous to farmers and feed mixers, following developments of recent years. Research has shown that cooking greatly enhances the nutritional value of soybeans by detoxifying the enzymes hindering digestion of the raw product. In addition, the economic situation of fats and oils has changed. These products are no longer in short supply and oil prices have generally declined in recent years except for the upturn this current year.

How Cooked Soybeans Are Fed

Soybean meal and soybean oil have high protein and energy values. Feeding of soybean meal and fat or oil to livestock has increased in recent years. Cooked, unextracted soybeans contain both meal and oil.

In a feeding ration, ingredients are used to make a composite product. Protein, fat, nitrogen-free extract, fiber, minerals, and vitamins are essential factors in a ration. Modern, high efficiency rations, developed through nutritional research and most widely used in the broiler industry, are high-protein, high-energy feeds. To formulate these feeds, protein concentrates (such as soybean meal) and added fats (usually tallow) are used. Soybeans converted to a feed ingredient by cooking, without removal of the oil, produces a single granular ingredient rich in protein and oil.

1/ Poats, F. J., Doty, Jr., H. O., and Eley, C. P., Cooked, Unextracted Soybean Meal, Its Economic Feasibility in Poultry Feeds (Preliminary Report). U. S. Department of Agriculture, Economic Research Service, ERS-32, October 1961.

2/ Doty, Harry O. Jr., Fats Added to Feeds--An Economic Analysis, U. S. Department of Agriculture, Economic Research Service, Mktg. Res. Rpt. 498, Sept. 1961.

Nutritional research and experience with poultry, swine, beef cattle, calf, sheep, and pet feeds show added fat in formula feeds improves the feed's efficiency. However, high level use of soybean oil in swine feed causes "soft pork." Broiler feeds formulated with added feed-grade fat are now a standard practice. Experimentally, broiler feeds containing over 30 percent added fat have been successfully fed. Up to 10 percent added fat has been used by large commercial feed manufacturers in high-energy, high-protein broiler feeds. Most present day broiler feeds contain 2-4 percent added fat.

The merit of using cooked soybeans in mixed feeds has been proved. Extensive testing was carried out in poultry and hog feeds. Cooked soybeans are also suitable for use in making all mixed feeds now containing added fat. In formulating such rations, soybeans contain an average of 38 percent protein (based on chemical analysis) and have an average oil crushing yield of 18.3 percent.

Feed formulas can be adjusted to desired levels of fat or protein when cooked, unextracted soybeans are used. In most high-energy (added fat) content mixed feeds, oil in cooked soybeans can supply all the added energy necessary. For additional protein in a formula feed than provided by cooked soybeans, solvent-extracted soybean meal or other low-fat content protein concentrates may be added.

Why Cooked Soybeans Can Be Economical

Heat treatment of soybeans at local plants in soybean-growing areas is a new way to obtain cooked, full-fat soybeans for livestock feeds at a low cost. Availability of local facilities could reduce transportation, storage, and handling costs that farmers and feed mixers now incur in obtaining their protein and fat requirements. Depending upon location, oil mills now processing soybeans into meal and oil could also become economical cooked, full-fat soybean product sources.

Farmers' soybeans go to oilseed processors who extract the oil and sell the meal for livestock feed uses. At present, meal is the more valued component on a total weight basis. In recent years, livestock farmers have been unable to purchase soybean meal in some locations, and at times local soybean meal prices have increased sharply above those at Decatur, Ill., the price-basing point for soybean products.

Many soybean-growing areas are also livestock and poultry feeding areas. The protein in cooked soybeans can replace an equal amount of protein from soybean meal. Cooking soybeans could solve local soybean meal shortages that do occur.

Soybean oil, an edible oil, normally sells at about double the price of feed-grade tallow. Nutrition research shows that soybean oil provides about 29 percent more energy than tallow in broiler feeds. Feed-grade tallow has 3230 calories per pound compared to 4172 calories for soybean oil. 1/

1/ Renner, Ruth and Hill, F. W., "Metabolizable Energy Value of Fats and Fatty Acids for Chickens." Feedstuffs, Vol. 30 (46), Nov. 15, 1958, p. 15. "Studies of the Effect of Heat Treatment on the Metabolizable Energy Value of Soybeans and Extracted Soybean Flakes for the Chick." The Journal of Nutritions, Vol. 70 (2), Feb. 1960, p. 222.

Therefore, soybean oil, at 8.0 cents per pound, equals feed-grade tallow, at 6.2 cents per pound, to the feed mixer. Or, to put it another way, the greater energy value of soybean oil makes it worth almost 2 cents a pound more than feed-grade tallow at these prices. Price spreads between crude soybean oil and feed-grade tallow have, in recent years, ranged from 2 to 5 cents a pound.

Price of soybean meal used by feed mixers varies widely throughout the United States. Usually, freight charges on soybean meal are from the Decatur, Ill., price-basing point to the local feeding area, and account for most of this price variation. So, if cooked soybeans were processed in local soybean-producing, livestock-feeding areas, most of the transportation costs associated with obtaining soybean meal would be eliminated. This can be a big factor in favor of cooking soybeans in local growing areas for local livestock feeding. Freight charges of $8 per ton and more are not uncommon.

Special storage, heating, pumping, handling, and mixing equipment is needed to add fat to feeds. Fat retained in a feed ingredient (such as cooked soybeans) that is handled like a dry ingredient, eliminates the need for equipment and costs associated with adding fats to feeds.

Other advantages for locating cooked soybean product facilities in soybean-producing, livestock-feeding areas are: Savings on transportation charges for fat; buying of soybeans at local farmers' prices with little or no delivery charge to the cooking facility; higher nutritive value of the protein from properly cooked soybeans as compared to soybean meal; lack of a solvent residue normally contained in the feed material; and the growth-stimulating properties of soybean oil.

How To Determine Whether Cooked Soybeans Are Economical In Local Areas

The cost of preparing cooked soybeans in a particular location depends on the price received by farmers for soybeans plus cost of cooking. A comparison of these costs with the cost of an equivalent amount of protein and energy from 44 percent soybean meal and feed-grade tallow (present ingredients used in mixed feeds) at local delivered prices, indicates the relative economics of use of the alternative sources of these ingredients. The advantage or disadvantage of substitution may be computed by substituting applicable local area figures for the unknowns in the following equation:

$$A = (0.8636 \cdot Y) + (W \cdot 1.292) \quad \cdot \quad (Z) \; - \; (S + \$5.00)$$

A is the cost advantage or disadvantage for making cooked soybeans. Y is the local price per ton to farmers for 44 percent soybean meal. W is the percentage of oil in local soybeans, minus 0.5 percent times 2,000 pounds, 1/ or the soybean crushing yield of oil per ton. Z is the local cost per pound for feed-grade fat and S is the price per ton received by farmers for soybeans. The 0.8636 constant factor is the relative protein content of whole soybeans

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1/ Percentage of oil in local soybeans is reduced by 0.5 percent to compensate for oil left in solvent-extracted soybean meal since only the extractable oil is subject to substitution.

(38 percent) to soybean meal (44 percent). The 1.292 constant is the relative energy value of soybean oil (4172 calories) to feed-grade tallow (3230 calories), and the \$5.00 constant is the estimated cost of processing a ton of cooked, whole soybeans. 1/ The application of this formula in table 22 shows the economic advantage that would have occurred from using cooked soybeans under conditions that existed in some areas of the United States for the 1963-64 marketing year (September-August).

The Arkansas situation (see table 22) is computed for 1963-64 by using the equation in this way:

$$A = (0.8636 \cdot Y) + (W \cdot 1.292) \cdot (Z) - (S + \$5.00)$$

Substitute values for Y, Z, and S from table 22. In calculating W, the U. S. average soybean crushing yield of 18.3 percent oil was used.

$$A = (0.8636 \cdot \$90.80) + (18.3\% \cdot 2000) \cdot (1.292) \cdot (\$0.058) - (\$2.53 \cdot 33.333 + \$5.00)$$

$$A = \$78.41 + (366) \cdot (1.292) \cdot (\$0.058) - (\$84.33 + \$5.00)$$

$$A = \$78.41 + (473) \cdot (\$0.058) - \$89.33$$

$$A = \$78.41 + \$27.43 - \$89.33$$

$$A = \$105.84 - \$89.33$$

$$A = \$16.51$$

For 1963-64, the estimated average economic advantage in Arkansas of using cooked soybeans as compared to using 44 percent soybean meal and inedible tallow in mixed feeds (equivalent feed value basis) was \$16.51 per ton.

Wherever prices farmers received for soybeans have been less than the cost of 44 percent soybean meal to farmers, the conversion of soybeans to a whole-cooked feed product has shown an advantageous margin above processing costs.

Commercial Equipment for Cooking Soybeans

Many existing soybean processors can make a cooked or toasted full-fat soybean meal using present equipment. Equipment specially designed or adapted for the new-type processing is becoming commercially available. Three types of cooking equipment using different ways of processing are available. These are the infra-red cooker, the expander-extruder cooker, and the high-pressure steam cooker.

1/ Based on highest estimate supplied by equipment manufacturers.

Table 22.--Estimated economic advantage of using cooked soybeans as compared to using 44 percent soybean meal and feed-grade fat in mixed feeds (equivalent feed value basis) in various locations, 1963-64 crop year

Locality	Soybean meal plus inedible tallow					Cooked soybeans				Estimated advantage favoring cooked soybeans
	Prices paid by farmers for 44% soybean meal 1/		Prices paid for feed-grade fat 2/		Total cost 3/	Prices received by farmers for soybeans 1/		Cost of cooking 4/	Total cost	
	Ton	1,727 lbs. 5/	Cents per lb.	473 lbs. 5/		Bu.	Ton	Ton	Ton	Ton
Arkansas:	$90.80	$78.41	$0.058	$27.43	$105.84	$2.53	$84.33	$5.00	$89.33	$16.51
Delmarva: 6/	103.40	89.30	0.058	27.43	116.73	2.50	83.33	5.00	88.33	28.40
Georgia:	97.20	83.93	0.058	27.43	111.37	2.54	84.67	5.00	89.67	21.70
Ohio:	102.40	88.42	0.058	27.43	115.86	2.52	84.00	5.00	89.00	26.86

1/ Season average price, Sept. 1963-Aug. 1964. Price of 44 percent soybean meal is based on average of mid month prices per 100 pounds, Agricultural Prices, SRS-USDA.

2/ Average price of tallow, inedible, packers' prime, tank cars, C.A.F. Chicago, Ill., Sept., 1963-Aug. 1964, Fats and Oils Situation, ERS-USDA

3/ Does not include costs associated with adding fats to mixed feeds.

4/ Based on highest estimate furnished by equipment manufacturers. It includes labor, fuel, power requirements, amortization of equipment, maintenance, taxes and insurance.

5/ To equal the nutritional value of one ton of cooked soybeans it takes 1,727 pounds of 44% protein soybean meal and 473 pounds of tallow. These figures are based on soybeans containing 38% protein and having an average crushing yield of 18.3% oil. Total oil content of soybeans is not used because only oil which can be extracted is subject to substitution. In this fat substitution, 4172 calories per pound was used for soybean oil and 3230 calories per pound was used for tallow.

6/ Average of Delaware and Maryland.

The method used and the size of plant affects the cost of cooking soybeans. The estimated cost of cooking soybeans by the infra-red method in a 1-ton-per-hour plant is $5.00 per ton. [1] Cost of cooking soybeans by the expander-extruder method in a 4-ton-per-hour plant is also estimated at about $5.00 per ton. [1] [2] Cooking soybeans by the high-pressure steam method in a 10-ton-per-hour plant is estimated at less than $1.00 per ton. [1] These figures include labor, fuel, power, amortization, maintenance, taxes, and insurance. Storage of soybeans and delivery of cooked soybeans to feed mixers would be added costs.

Whole or dehulled soybeans can be handled in each type of equipment. Dehulling makes possible the production of a cooked soybean product having a higher protein content than the average 38 percent found in whole soybeans.

Cooked soybean products can be stored for a long period. Infra-red cooked soybeans can be stored in the hull. Since oil cells are not ruptured, the product may be stored indefinitely. Storage tests run on the expander-extruder processed soybean product show it to be stable. It probably can be stored up to 1 year. Soybeans contain large quantities of lecithin, a natural preservative that makes longer periods of storage of processed fat products possible.

Infra-Red Cooker

Inconel screens, heated by burning LP or natural gas, radiate infra-red rays that cook soybeans by internal heat. Soybeans are dropped past the heat source from a rotating perforated cylinder. Infra-red rays cook the soybeans as they fall. Cooked soybeans are removed from the bottom by a gravity feed and then allowed to dissipate their heat. The cooking time for soybeans is about 6 to 8 minutes. After cooking and cooling, soybeans are ready for storage, grinding through a hammer mill, and use as a feed ingredient. The capacity of this equipment is approximately 1 ton per hour.

Expander-Extruder Cooker

Steam plus compression provide the heat necessary to cook soybeans in this process. Ground and heat-conditioned soybeans are fed into a unit consisting of a screw housed in a steam-jacketed barrel and designed to extrude material through a restricted die opening at one end. Subjecting the feed material to pressures and temperatures about equal to those of atmospheric steam amounts to a pressure-cooking system. The screw forces the soybean material out a narrow diehead opening. As the material emerges through the opening, a fast reduction in pressure takes place. The material expands rapidly and ruptures most of the oil cells. With soybeans, the emerging extruded product

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1/ Based on estimate supplied by equipment manufacturer.
2/ Based on preliminary studies made at the U. S. Department of Agriculture, Northern Utilization Research and Development Division Laboratory for a 4-ton per-hour expander-extruder plant.

quickly reabsorbs the freed oil. The material runs through a dryer-cooler, then, where desired, passes over crumble rolls to reduce agglomerates. A cooked soybean product made this way requires about 3 to 4 minutes in the cooker. Capacities of present expander-extruder equipment range from ½ to 4 tons per hour with several sizes available. These capacities are for producing a soybean product having optimum biological feed value.

High Pressure Steam Cooker

A continuous high-pressure steam cooker can be used for converting whole soybeans to a feed ingredient. Ground or whole soybeans are fed into a steam pressure vessel and are moved through it by a screw conveyor or by mechanical agitation. The product is cooked in high-pressure steam for a short time. After cooking the product should be cooled, flaked, and dried from 18-20 percent moisture to 12 percent before use or storage. Some expansion of the soybean material takes place, and some rupture of starch and fat cells occurs. Some high-pressure steam processing equipment, with slight modification, can also do animal byproduct rendering. If a rendering plant is also wanted in the local area, it may serve both needs. The capacity of equipment ranges from 6 to 20 tons per hour.

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The _Fats and Oils Situation_ is published January, March, May, August and November.

The next issue is scheduled for release on June 4, 1965.

Table 23.--Fats, oils, including their products: Production from domestic and imported materials, and factory and warehouse stocks at end of month, calendar years 1961-64

Item	Production 1/						Stocks			
	Average		Calendar Years				December 31			
	1951-55	1956-60	1961	1962	1963	1964	1961	1962	1963	1964
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
PRIMARY FATS AND OILS										
Food fats and oils										
Butter 2/	1,327.0	1,384.9	1,484.1	1,537.1	1,420.1	1,434.2	224.8	318.7	207.0	66.5
Lard and rendered pork fat 3/	2,374.8	2,441.4	2,384.0	2,365.0	2,373.0	2,384.0	110.4	128.4	119.4	127.1
Beef fats	223.5	333.7	439.7	434.9	500.6	525.9	24.7	33.0	35.6	41.7
Total edible animal fats	3,925.3	4,160.0	4,307.8	4,337.0	4,293.7	4,344.1	359.9	480.1	362.0	235.3
Corn oil	249.1	301.4	335.8	365.3	390.5	413.9	30.7	44.9	64.8	40.1
Cottonseed oil	1,764.3	1,667.0	1,793.8	1,944.9	1,917.0	1,932.8	392.0	530.0	694.0	506.3
Peanut oil	86.4	84.9	97.4	64.2	99.9	124.3	7.2	12.0	30.1	8.0
Soybean oil	2,534.2	3,870.9	4,442.3	4,888.8	5,053.2	4,943.8	859.6	733.5	1,024.0	544.2
Total edible vegetable oils	4,634.0	5,924.2	6,669.3	7,263.2	7,460.6	7,414.8	1,289.5	1,320.4	1,812.9	1,098.6
Soap fats and oils										
Tallow, inedible, and greases excluding wool grease 4/	2,581.7	3,212.6	3,644.7	3,744.6	3,994.1	4,537.6	408.5	396.7	386.2	365.7
Palm oil	---	---	---	---	---	---	23.0	14.3	5/37.0	5/ 18.7
Fish and marine oil	153.4	189.9	266.1	255.9	185.8	169.2	132.9	182.4	5/168.4	5/139.9
Coconut oil 5/	447.2	440.3	498.8	429.1	348.3	341.8	319.3	242.8	199.5	154.0
Total soap fats	3,182.3	3,842.8	4,409.6	4,429.6	4,528.2	5,048.6	883.7	836.2	791.1	678.3
Drying oils										
Castor oil	66.4	24.6	---	---	---	---	35.1	37.8	5/223.6	5/206.3
Linseed oil	615.4	499.8	426.3	382.1	399.1	443.6	128.4	123.4	111.8	166.3
Safflower seed oil	---	---	---	116.5	116.1	N.A.	---	50.6	62.8	13.1
Tall oil	394.2	714.7	826.3	879.6	991.3	1,104.0	106.6	119.8	188.6	255.2
Tung oil	24.4	29.0	16.0	28.0	11.8	24.5	11.8	17.4	15.3	35.7
Total drying oils	1,100.4	1,268.1	1,268.6	1,406.2	1,518.3	1,572.1	281.9	349.0	602.1	676.6
Grand total 6/ 7/	12,842.0	15,195.1	16,655.3	17,435.9	17,800.9	18,379.5	2,815.0	2,985.7	3,568.1	2,688.8
From domestic materials	12,328.4	14,730.2	16,156.5	17,006.8	17,452.6	18,037.7				
From imported materials	513.6	464.9	498.8	429.1	348.3	341.8				
FAT-AND-OIL PRODUCTS										
Cooking and salad oils	---	1,861.4	2,123.7	2,532.2	2,295.7	2,807.3	199.9	273.3	145.1	118.8
Baking and frying fats (shortening)	1,725.1	2,044.4	2,456.2	2,688.6	2,560.8	2,649.4	123.0	164.9	119.3	121.1
Margarine	1,263.3	1,542.6	1,723.7	1,725.9	1,793.6	1,857.4	32.8	39.3	36.4	48.0
Fatty acids	527.6	580.1	706.0	784.6	838.7	938.8	71.0	83.2	112.6	81.7

1/ Factory production except as otherwise noted.

2/ Creamery butter and cold-storage stocks, United States Department of Agriculture.

3/ Total commercial. Excludes farm production. Federally inspected in 1961 totaled 2,118.0; 1962 totaled 2,103.8; 1963 totaled 2,116.7 and 1964 totaled 2,153.2 million pounds.

4/ Total apparent production.

5/ Stocks include GSA stockpile.

6/ Computed from unrounded numbers.

7/ Excludes estimated output of farm butter and farm lard, 1951-55 averaged 441 million pounds, 1956-60 averaged 272, million pounds; 1961 totaled 185; 1962 totaled 157; 1963 totaled 136 and 1964 totaled 124 million pounds.

Table 24.--Food fats and oils: Supply and disposition, 1959-64

Total 1/

Year beginning October	Production			Stocks		Domestic disappearance			Exports		
	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct. 1	Feb. 1	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
1959	4,791	7,689	12,481	734	1,276	2,870	5,586	8,457	1,368	2,511	3,879
1960	4,823	7,533	12,356	831	1,221	2,990	5,724	8,713	1,430	1,738	3,167
1961	5,065	8,224	13,289	1,253	1,783	3,054	5,863	8,917	1,464	2,618	4,082
1962	5,178	8,675	13,853	1,488	1,948	3,355	5,537	8,892	1,349	3,002	4,350
1963	5,154	8,637	13,791	2,065	2,223	3,308	6,108	9,416	1,674	3,342	5,016
1964	5,386			1,361	1,417	3,316			2,002		
	Butter (actual weight), except farm 2/										
1959	410	959	1,369	93	34	457	851	1,307	14	7	21
1960	416	1,018	1,434	136	76	474	851	1,325	2	6	8
1961	489	1,063	1,552	238	239	486	869	1,356	4	15	19
1962	464	992	1,456	419	363	494	802	1,296	27	104	131
1963	424	995	1,419	450	229	513	851	1,364	135	184	319
1964	440			188	63	471			95		
	Lard, except farm										
1959	980	1,576	2,556	93	136	672	1,168	1,840	265	451	716
1960	811	1,534	2,345	92	114	587	1,239	1,825	202	310	513
1961	854	1,496	2,350	100	102	678	1,190	1,868	174	334	508
1962	875	1,514	2,389	73	148	674	1,136	1,810	126	445	571
1963	874	1,508	2,382	81	106	653	1,036	1,689	196	510	706
1964	838			68	151	560			196		
	Beef fats 3/										
1959	110	236	347	22	27	96	223	319	9	14	23
1960	124	294	419	27	25	122	290	411	5	5	10
1961	151	293	444	25	26	147	291	438	3	7	10
1962	142	337	480	21	38	123	334	457	3	7	9
1963	167	355	521	34	36	162	360	522	2	8	10
1964	172			25	46	148			2		
	Total edible vegetable oils 4/ 5/										
1959	3,291	4,918	8,209	527	1,080	1,674	3,404	5,078	1,051	1,980	3,031
1960	3,472	4,686	8,158	576	1,005	1,836	3,399	5,234	1,191	1,363	2,554
1961	3,570	5,372	8,943	890	1,417	1,766	3,566	5,332	1,259	2,209	3,468
1962	3,696	5,832	9,529	975	1,399	2,091	3,330	5,422	1,165	2,381	3,546
1963	3,689	5,779	9,468	1,500	1,854	2,009	3,944	5,953	1,312	2,558	3,870
1964	3,936			1,080	1,156	2,178			1,668		

Continued -

Table 24.--Food fats and oils: Supply and disposition, 1959-64

Year beginning October	Production			Stocks		Domestic disappearance			Exports		
	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct. 1	Feb. 1	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
	Cottonseed oil 5/										
1959	938	894	1,832	190	476	434	866	1,299	219	287	506
1960	937	849	1,786	217	434	574	887	1,461	146	225	371
1961	942	1,010	1,952	170	434	470	883	1,352	209	266	474
1962	951	978	1,930	296	610	525	822	1,347	112	279	392
1963	940	999	1,939	488	740	537	871	1,407	151	436	587
1964	932			433	518	586			261		
	Soybean oil 5/										
1959	2,198	3,692	5,891	298	565	1,106	2,269	3,376	825	1,680	2,505
1960	2,367	3,484	5,850	308	521	1,117	2,212	3,329	1,037	1,115	2,152
1961	2,463	4,011	6,475	677	938	1,152	2,388	3,540	1,051	1,942	2,993
1962	2,578	4,496	7,074	618	725	1,418	2,206	3,624	1,053	2,095	3,148
1963	2,562	4,363	6,924	920	1,022	1,310	2,750	4,060	1,149	2,058	3,207
1964	2,804			578	587	1,415			1,380		
	Corn oil										
1959	111	233	344	24	27	107	221	329	---	---	---
1960	114	238	352	39	33	120	238	358	---	---	---
1961	121	265	386	33	37	118	252	370	---	---	---
1962	129	266	395	50	49	129	252	381	---	---	---
1963	136	280	415	63	62	136	280	416	---	---	---
1964	137			62	39	160			---		
	Peanut oil 5/										
1959	31	61	92	15	12	27	48	74	7	13	20
1960	39	75	114	12	18	24	62	86	9	22	31
1961	26	46	73	9	8	27	43	70	6/	1	1
1962	23	71	94	11	14	19	50	69	6/	6	6
1963	36	87	123	30	29	25	44	69	12	65	76
1964	51			8	13	18			27		

1/ Includes butter, except farm; lard, except farm; beef fats; and edible vegetable oils. Production and exports include the oil equivalent of exported oilseeds. Domestic disappearance and exports have been adjusted for exports of processed food oils not classified by kind, shortening, margarine, and other secondary fats. Exports also include shipments and quantities from CCC stocks that were not reported in Census data. Beginning 1960 exports indlude estimates of foreign donations of fats and oils not reported by Census. 2/ Beginning 1962, stocks include estimates of butter oil, ghee, and canned butter. 3/ Includes edible tallow, oleo stock, oleo oil and oleostearine. 4/ Includes cottonseed, soybean, corn, peanut, and edible olive oils. Production includes imports of corn, peanut, and edible olive oils. 5/ Production and exports include oil equivalent of oilseeds exported for crushing. 6/ Less than 500,000 pounds.

Totals computed from unrounded numbers.

Table 25.--Selected nonfood fats and oils: Supply and disposition, 1959-64

Year	Production			Stocks		Domestic disappearance			Exports		
	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct. 1	Feb. 1	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.	Oct.-Jan.	Feb.-Sept.	Oct.-Sept.
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
					Inedible tallow and grease						
1959	1,176	2,364	3,540	327	325	585	1,221	1,806	593	1,125	1,718
1960	1,161	2,400	3,561	343	347	602	1,143	1,745	555	1,215	1,769
1961	1,232	2,545	3,776	389	408	638	1,455	2,093	575	1,135	1,710
1962	1,234	2,595	3,829	365	475	711	1,414	2,124	413	1,325	1,738
1963	1,411	3,016	4,427	334	387	715	1,411	2,126	643	1,712	2,355
1964	1,510			282	426	734			631		
					Coconut oil 1/ 2/						
1959	215	422	637	308	313	208	407	615	3	6	8
1960	249	408	657	323	358	213	462	675	1	2	4
1961	249	406	656	301	308	242	507	749	1	1	2
1962	312	487	799	206	240	278	494	773	3/	5	6
1963	241	504	745	227	193	270	535	805	5	1	6
1964	265			162	148	275			5		
					Fish and marine oil 1/ 4/						
1959	53	184	237	136	104	43	69	112	43	109	152
1960	60	264	323	110	84	37	84	121	48	84	132
1961	64	244	308	180	126	89	107	196	29	101	130
1962	84	205	289	162	166	52	5	47	27	195	222
1963	52	192	244	182	130	26	49	75	78	125	203
1964	46			147	136	25			33		
					Tall oil						
1959	268	546	814	141	145	254	542	795	10	37	47
1960	240	554	794	113	86	249	520	770	17	22	40
1961	282	600	882	97	113	259	567	826	7	19	26
1962	290	658	948	127	128	282	595	877	8	22	31
1963	344	735	1,079	168	197	305	666	971	9	21	30
1964	372			246	260	344			13		
	July-Jan.	Feb.-June	July-June	July 1	Feb. 1	July-Jan.	Feb.-June	July-June	July-Jan.	Feb.-June	July-June
					Linseed oil						
1959	325	140	465	97	164	256	162	418	2	53	55
1960	224	175	399	90	104	204	166	370	4	19	24
1961	251	140	391	94	132	213	166	378	1	1	2
1962	248	180	428	105	131	214	180	394	8	1	9
1963	215	179	394	131	124	208	163	370	13	1	14
1964	264			139	180	206			18		

1/ Production includes imports of oil.
2/ Stocks include GSA Stockpile.
3/ Less than 500,000 pounds.
4/ Beginning March 1963 stocks include GSA Stockpile.
Totals computed from unrounded numbers.

Table 26.--Domestic disappearance of food and nonfood fats and oils, by end products, total and per person, year beginning October by quarters, with comparisons

Year and Quarter	Unit	Food							Nonfood				All products (fat content)
		Butter (actual weight)	Margarine (actual weight)	Lard (direct)	Baking and frying fats (shortening)	Salad and cooking oils 1/	Other edible 2/	Total (fat content)	Soap 3/	Drying oils 4/	Other 5/	Total	
1962-63													
Oct.-Dec.:													
Total	Mil.lb.	375	476	376	704	526	10	2,306	141	192	813	1,147	3,453
Per person	Lb.	2.0	2.5	2.0	3.7	2.8	---	12.3	.8	1.0	4.3	6.1	18.4
Jan.-Mar:													
Total	Mil.lb.	355	454	312	606	601	20	2,202	208	208	794	1,210	3,412
Per person	Lb.	1.9	2.4	1.7	3.2	3.2	.1	11.7	1.1	1.1	4.2	6.4	18.1
Apr.-June													
Total	Mil.lb.	346	424	294	616	443	25	2,017	220	242	775	1,237	3,254
Per person	Lb.	1.8	2.2	1.6	3.3	2.3	.1	10.7	1.2	1.3	4.1	6.5	17.2
July-Sept:													
Total	Mil.lb.	255	428	246	639	659	---	2,065	213	219	734	1,166	3,231
Per person	Lb.	1.3	2.3	1.3	3.4	3.5	---	10.9	1.1	1.2	3.9	6.1	17.0
Season:													
Total	Mil.lb.	1,331	1,782	1,229	2,565	2,229	20	8,589	783	862	3,116	4,760	13,349
Per person	Lb.	7.1	9.4	6.5	13.6	11.8	.1	45.5	4.1	4.6	16.5	25.2	70.7
1963-64													
Oct.-Dec:													
Total	Mil.lb.	388	481	349	679	606	116	2,447	141	191	810	1,143	3,590
Per person	Lb.	2.0	2.5	1.8	3.6	3.2	.6	12.2	.7	1.0	4.3	6.0	18.8
Jan.-Mar:													
Total	Mil.lb.	377	482	360	631	603	67	2,354	189	226	799	1,213	3,567
Per person	Lb.	2.0	2.5	1.9	3.3	3.2	.3	12.3	1.0	1.2	4.2	6.3	18.7
Apr.-June:													
Total	Mil.lb.	332	426	264	640	618	60	2,191	217	253	807	1,277	3,467
Per person	Lb.	1.7	2.2	1.4	3.3	3.2	.3	11.4	1.1	1.3	4.2	6.7	18.1
July-Sept:													
Total	Mil.lb.	298	446	287	690	786	---	2,271	218	226	748	1,192	3,463
Per person	Lb.	1.5	2.3	1.5	3.6	4.1	---	11.8	1.1	1.2	3.9	6.2	18.0
Season:													
Total	Mil.lb.	1,395	1,835	1,260	2,640	2,613	152	9,263	765	896	3,164	4,825	14,087
Per person	Lb.	7.3	9.6	6.6	13.8	13.7	.8	48.4	4.0	4.7	16.5	25.2	73.6
1964-65 6/													
Oct.-Dec:													
Total	Mil.lb.	350	483	309	665	694	---	2,272	149	169	898	1,216	3,489
Per person	Lb.	1.8	2.5	1.6	3.4	3.6	---	11.8	.8	.9	4.7	6.3	18.1
Jan.-Mar:													
Total	Mil.lb.												
Per person	Lb.												
Apr.-June:													
Total	Mil.lb.												
Per person	Lb.												
July-Sept:													
Total	Mil.lb.												
Per person	Lb.												
Season:													
Total	Mil.lb.												
Per person	Lb.												

1/ Not reported separately prior to 1959; included in "other edible" category.

2/ Mainly salads and cooking oils prior to January 1959. Includes all oils and fats (other than butter, lard, margarine and shortening) used in mayonnaise and salad dressing, bakery goods, and confectionery, commercial roasting and frying etc.

3/ Fat equivalent of soap used in synthetic rubber is included in "other industrial products". Adjusted for foreign trade and changes in stocks.

4/ Paints, varnishes, floor coverings, oilcloth, printing inks, core oils, synthetic resins, insulation, linings, packings, coated fabrics, caulking and other protective coatings.

5/ Includes use of fats and oils in chemicals, lubricants and greases, animal feeds; tin and terne plate, pharmaceuticals, leather, candles, synthetic organic detergents, toilet articles, and miscellaneous industrial products.

6/ Preliminary.

Computed from unrounded numbers.

Table 27.--Fats, oils, including their products: Production from domestic and imported materials, and factory and warehouse stocks at end of month

Item	Production 1/						Stocks			
	October-January		1964			1965	1964			1965
	1963-64	1964-65	Jan.	Nov.	Dec.	Jan.	Jan. 31	Nov. 30	Dec. 31	Jan. 31
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
PRIMARY FATS AND OILS										
Food fats and oils										
Butter 2/	424.2	440.1	128.8	96.1	119.4	129.7	187.1	95.3	66.5	63.1
Lard and rendered pork fat 3/	874.0	838.0	232.0	209.0	215.0	194.0	105.7	103.8	127.1	150.9
Beef fats	166.6	171.8	41.7	44.9	39.2	42.5	35.7	29.2	41.7	46.4
Total edible animal fats	1,464.8	1,449.9	402.5	350.0	373.6	366.2	328.5	228.3	235.3	260.4
Corn oil	132.9	136.6	32.7	33.5	32.0	35.1	62.4	43.4	40.1	38.9
Cottonseed oil	939.4	931.6	231.4	243.3	233.7	227.3	739.8	534.7	506.3	518.0
Peanut oil	36.4	46.0	14.3	10.3	13.6	13.8	28.9	8.8	8.0	12.9
Soybean oil	1,682.3	1,878.5	388.6	467.9	464.8	463.3	1,022.4	532.7	544.2	586.6
Total edible vegetable oils	2,791.0	2,992.7	667.0	755.0	744.1	739.5	1,853.5	1,119.6	1,098.6	1,156.4
Soap fats and oils										
Tallow, inedible, and greases excluding wool grease 4/	1,410.7	1,509.5	352.8	376.8	399.2	341.0	387.3	312.4	365.7	426.5
Palm oil 5/	---	---	---	---	---	---	35.0	19.4	18.7	17.7
Fish and marine oil 5/	32.2	18.4	.7	6.8	5.8	.5	129.8	144.6	139.9	135.5
Coconut oil 5/	132.7	144.3	30.0	37.8	N.A.	36.7	193.4	146.7	154.0	147.5
Total soap fats	1,575.6	1,672.2	383.5	421.4	405.0	378.2	745.5	623.1	678.3	727.2
Drying oils										
Castor oil 5/	---	---	---	---	---	---	220.0	201.0	206.3	204.4
Linseed oil	143.4	150.3	35.3	35.2	34.7	34.7	124.4	158.2	166.3	180.1
Safflower seed oil	29.0	---	---	---	---	---	62.8	17.4	13.1	14.9
Tall oil	343.7	371.7	92.9	91.9	89.4	95.9	197.1	238.1	255.2	260.0
Tung oil	11.6	20.2	2.5	5.7	6.8	7.7	16.5	25.0	35.7	41.4
Total drying oils	527.7	542.2	130.7	132.8	130.9	138.3	620.8	639.7	676.6	700.8
Grand total 6/ 7/	6,359.0	6,657.1	1,583.7	1,659.1	1,653.5	1,622.2	3,548.3	2,610.7	2,688.8	2,844.8
From domestic materials	6,226.3	6,512.8	1,553.7	1,621.3	1,653.5	1,585.5				
From imported materials	132.7	144.3	30.0	37.8	N.A.	36.7				
FAT-AND-OIL PRODUCTS										
Cooking and salad oils	723.3	974.1	175.6	249.9	234.0	212.4	137.5	137.5	118.8	158.2
Baking and frying fats (shortening)	904.9	894.1	207.1	238.5	197.9	193.8	114.2	112.2	121.1	122.8
Margarine	660.1	656.0	181.4	143.9	166.7	163.2	42.7	47.2	48.0	50.3
Fatty acids	294.7	326.6	74.9	75.5	83.7	78.8	112.1	83.9	81.7	86.1

1/ Factory production except as otherwise noted.

2/ Creamery butter and cold-storage stocks, United States Department of Agriculture.

3/ Total commercial. Excludes farm production. Federally inspected in October-January 1963-64 totaled 786.2 million pounds; October-January 1964-65 totaled 761.6 million pounds.

4/ Total apparent production.

5/ Stocks include GSA stockpile.

6/ Computed from unrounded numbers.

7/ Excludes estimated output of farm butter and farm lard, 72 million pounds in October-January 1963-64; 64 million pounds in October-January 1964-65.

Table 28.--Imports and exports of fats, oils, oil-bearing materials and fat-and-oil products in terms of oil

Item	Imports for consumption					Exports 1/				
	Oct.-Jan.		1964		1965	Oct.-Jan.		1964		1965
	1963-64	1964-65	Nov.	Dec.	Jan.	1963-64	1964-65	Nov.	Dec.	Jan.
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Food fats and oils										
Butter	1.8	.3	.1	.1	2/	58.3	77.6	19.1	28.7	12.3
Lard	---	---	---	---	---	178.3	185.0	63.5	42.6	22.9
Beef fats	2/	---	---	---	---	2.4	2.0	.5	.9	.2
Total, edible animal fats	1.8	.3	.1	.1	2/	239.0	264.6	83.1	72.2	35.4
Corn oil	2.7	---	---	---	---	---	---	---	---	---
Cottonseed oil	---	---	---	---	---	150.3	211.2	22.1	88.7	65.4
Cottonseed (17 percent)	---	---	---	---	---	.5	.7	.2	.3	.2
Olive oil, edible	15.5	13.3	4.0	3.9	1.4	---	---	---	---	---
Peanut oil	---	2/	---	2/	---	11.8	22.4	4.2	10.1	2.9
Peanuts, shelled (43.5 percent)	---	---	---	---	---	---	4.6	1.5	.1	---
Soybean oil	---	---	---	---	---	269.3	454.0	117.8	157.6	68.4
Soybeans (18.3 percent)	2/	2/	---	2/	---	879.3	925.3		268.0	31.6
Other vegetable oils	4.8	3.5	.5	1.1	.5	2.9	5.9	2.2	1.6	.6
Total, edible vegetable oils	23.0	16.8	4.5	5.0	1.9	1,314.1	1,624.0	449.2	526.4	169.1
Soap fats and oils										
Tallow, inedible	.4	.6	.1	.3	.1	560.4	562.6	168.1	140.6	92.2
Greases	.7	.1	---	---	---	82.7	68.7	23.0	20.2	2.8
Fish and fish liver oils non-medicinal	1.3	.2	.1	2/	2/	75.5	3/33.1	.1	11.1	3/1.3
Marine mammal oils	18.8	27.8	16.8	.3	9.9	2.4	---	2/	.6	---
Olive oil, inedible	.5	.1	---	---	.1	---	---	---	---	---
Palm oil	4.7	2.7	.5	.8	1.4	---	---	---	---	---
Total, slow-lathering oils	26.4	31.5	17.5	1.4	11.5	721.0	664.4	191.2	172.5	96.3
Coconut oil	108.3	120.8	27.6	6.1	71.8	4.6	4.8	.5	.4	3.6
Copra (64 percent)	142.3	153.4	59.3	28.7	39.4	2/	---	---		---
Palm kernel oil	28.6	23.4	9.5	4.2	3.0	---	---	---	---	---
Total, lauric-acid oils	279.2	297.6	96.4	39.0	114.2	4.6	4.8	.5	.4	3.6
Drying oils										
Flaxseed (35.7 percent)	2/	2/	---	2/	---	26.6	46.3	17.1	.7	2/
Linseed oil	2/	2/	2/	2/	2/	10.6	10.8	2.4	5.2	.1
Oiticica oil	1.6	1.2	---	.6	.2	---	---	---	---	---
Tall oil	---	---	---	---	---	9.0	13.5	3.3	3.0	2.8
Tung oil	7.9	10.1	1.1	4.3	1.8	1.0	.2	.1	2/	2/
Safflower seed (32%)	---	---	---	---	---	---	---	---	---	1.3
Total	9.5	11.3	1.1	4.9	2.0	47.2	70.8	22.9	8.9	4.2
Other industrial oils and										
Cashew nut shell liquid (oil)	N.A.	N.A.	N.A.	N.A.	N.A.	---	---	---	---	---
Castor oil	38.2	48.3	15.3	10.8	6.4	.2	.4	.1	.2	---
Castor beans (46.5 percent)	.3	2/	---	2/	---	---	---	---	---	---
Fish-liver oils, medicinal	5.4	4.7	1.2	1.1	.9	.2	---	.1	2/	---
Rapeseed oil	.6	2.1	.9	.7	---	---	---	---	---	---
Wool grease	2.2	2.2	.6	.8	.1	---	---	---	---	---
Other vegetable oils and fats, inedible	4.0	4.0	.7	1.5	.8	7.2	18.4	5.1	5.6	5.2
Total	50.7	61.3	18.7	14.9	8.2	7.6	18.8	5.3	5.8	5.2
Other oilseeds n.e.c. (20%) 4/	---	---	---	---	---	48.8	52.0	10.7	13.1	---
Other products										
Margarine (fat content)	---	---	---	---	---	.9	1.0	.3	.2	.2
Shortening	---	---	---	---	---	3.3	7.0	2.9	2.9	2/
Cooking and salad oils	---	---	---	---	---	8.1	8.6	3.6	3.5	---
Salad products (fat content)	---	---	---	---	---	1.2	1.1	.2	.3	.2
Soap (fat content)	.6	.7	.3	.2	2/	3.3	4.7	1.3	1.7	.4
Fatty acids	3.6	2.8	.6	.9	.6	12.2	20.0	4.7	6.3	3.5
Total	4.2	3.5	.9	1.1	.6	29.0	42.4	13.0	14.9	4.3
Grand total 5/	394.8	422.3	139.3	66.2	138.6	2,411.2	2,741.9	775.8	814.2	318.0

1/ Includes re-exports but not shipments. Shipments average about 90 million pounds per year of which approximately 60 million are lard.

2/ Less than 50,000 pounds.

3/ Beginning January 1965 includes marine mammal oil and fish liver oils.

4/ Prior to January 1965, 30% mainly safflower oil.

5/ Computed from unrounded numbers.

Table 29.--Index numbers of wholesale prices of fats and oils

Item	1957-59=100				
	February		1964	1965	
	1963	1964	December	January	February
All fats and oils	88	89	107	106	108
All fats and oils, except butter	80	82	110	108	112
Grouped by origin:					
Animal fats	89	94	108	105	107
Vegetable oils, domestic	84	75	107	105	109
Vegetable oils, foreign	90	89	101	105	109
Grouped by use:					
Butter	98	98	98	99	99
Butter, seasonally adjusted	96	96	90	96	97
Lard	78	88	104	103	106
Food fats other than butter	81	79	106	105	108
Food fats other than butter and lard	82	75	106	105	109
All edible fats and oils	91	90	104	103	104
Soap fats	70	82	117	114	119
Drying oils	102	94	103	102	106
Other industrial	73	79	103	102	103
All industrial	78	86	117	114	118
Edible vegetable oils, grouped by degree of processing:					
Crude	82	74	106	105	109
Refined	89	75	98	96	97
End products	92	88	100	101	102
Margarine	93	93	101	100	101

All indexes except "Butter, seasonally adjusted" and "Other industrial" from Bureau of Labor Statistics.

Table 30.--Prices received by farmers and prices at terminal markets for specified oil-bearing materials and oilmeals

Item	Unit	February		1964	1965	
		1963	1964	December	January	February
		Dollars	Dollars	Dollars	Dollars	Dollars
Copra, Philippines, c.i.f. Pacific Coast	Short ton	161.88	169.38	186.25	193.50	204.88
Cottonseed, United States average	Short ton	48.50	48.70	48.60	49.20	48.20
Flaxseed, No. 1, Minneapolis	Bushel	3.10	3.10	3.20	3.18	3.20
Flaxseed, United States average	Bushel	2.79	2.79	2.90	2.91	2.92
Peanuts, No. 1, shelled, Spanish, Southeastern shipping points 1/	100 lb.	17.88	20.25	19.75	20.12	20.38
Peanuts, United States average	100 lb.	11.20	11.60	11.40	11.50	12.00
Soybeans, No. 1, Yellow, Chicago	Bushel	2.69	2.70	2.91	2.96	3.03
Soybeans, No. 1, Yellow, Illinois country shipping points	Bushel	2.59	2.65	2.83	2.87	2.95
Soybeans, United States average	Bushel	2.50	2.57	2.71	2.73	2.81
		Oilseed Meals (Bulk)				
Copra meal, 20 percent protein, Los Angeles	Short ton	80.00	78.00	70.20	74.50	76.50
Cottonseed meal, 41 percent protein, Memphis	Short ton	68.80	63.80	61.20	60.20	59.00
Cottonseed meal, 41 percent protein, Chicago	Short ton	76.80	72.30	68.40	69.80	67.50
Cottonseed meal, 41 percent protein, Atlanta	Short ton	74.80	71.20	64.20	64.50	64.90
Linseed meal, 34 percent protein, Minneapolis	Short ton	67.90	57.00	59.00	59.00	58.10
Linseed meal, 34 percent protein, New York	Short ton	86.10	77.80	76.40	76.40	76.40
Peanut meal, 45 percent protein, f.o.b. Southeastern mills	Short ton	69.90	63.10	66.60	66.50	66.70
Safflower meal, 20 percent solvent, San Francisco	Short ton	40.00	33.50	28.90	30.60	31.00
Soybean meal, 44 percent protein, Chicago	Short ton	76.50	78.80	72.10	72.10	74.20
Soybean meal, 44 percent protein, Decatur	Short ton	73.10	74.80	67.80	68.00	69.80
Soybean meal, 44 percent protein, Atlanta	Short ton	81.20	82.80	74.80	75.60	77.60
Soybean meal, 44 percent protein, Memphis	Short ton	74.90	76.50	70.30	68.90	71.80

1/ This price applies to peanuts for edible uses.

Compiled from Oil, Paint, and Drug Reporter, Daily Market Record (Minneapolis), Wall Street Journal, Chicago edition, reports of the Statistical Reporting Service and the Agricultural Marketing Service.

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